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TRENCH FARM SOLAR

Landscape and Visual Impact Assessment

June 2014

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LIGHTSOURCE RENEWABLE ENERGY LTD

Trench Farm

Landscape and Visual Impact Assessment

June 2014

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1 INTRODUCTION

1.1 General Introduction

1.1.1 This Landscape and Visual Impact Assessment (LVIA) identifies and assesses the likely landscape and visual effects of the proposed development of a Solar PV installation on land at Trench Farm, near Wrexham, upon the site and the surrounding area. The methodology used in this study conforms to current best practice and guidance.

1.2 Description of the development

1.2.1 The site covers approximately 21.3ha of land, approximately 11.5km to the south-east of Wrexham, which is at present given over to agriculture for grazing sheep. The site location is shown on Figure 1.

1.2.2 The proposed development comprises a solar PV array comprising individual solar panels grouped in tables. These would be ground mounted and erected in multiple rows and are not expected to exceed 2.5m in height. The site layout is illustrated by the Client's Site Design Plan within Appendix 1.

1.2.3 Site access will utilise existing field access from Trench Farm to the south west and the development will require the installation of a number of inverter cabinets and a power transformer cabin. The site will be secured by the erection of 2.4m high deer fence within the field boundary.

1.2.4 The development is expected to be operational for 25 years. At the end of this period, the development would be dismantled and the site restored or an application would be submitted to extend the life of the development. For the purposes of this report, it has been assumed that the development would be dismantled and the site restored.

1.3 Consultations

Screening

1.3.1 At the time of preparation of this landscape and visual impact assessment (LVIA) no screening opinion had been received from WCBC and so for the purposes of this LVIA, it has been assumed that EIA is not required.

2 METHODOLOGY

2.1 General Approach

2.1.1 Landscape effects associated with a development relate to changes to the fabric, character and quality of the landscape as a resource and how it is experienced. This requires consideration of the character of the landscape, the elements and features that it contains, and any value attached to the landscape (whether formally or informally).

2.1.2 Landscape Assessment Studies:

- direct effects upon specific landscape elements, especially prominent and eye catching features;
- change in character, which is the distinct, recognisable and consistent pattern of elements that creates distinctiveness and a sense of place;
- subtle effects that contribute towards the experience of intangible characteristics such as tranquillity, wildness and cultural associations; and
- effects on designated landscapes, conservation sites, and other acknowledged special areas of interest.

2.1.3 Visual effects concern changes in views available to people, and their visual amenity. Visual assessment concerns people's perception and response to changes in visual amenity. Effects may result from the change, or loss of, or new elements in the landscape that cause visual intrusion or the introduction of new features that obstruct views across the landscape.

2.1.4 Both landscape and visual effects can be adverse, beneficial or neutral, short, medium or long term, permanent or temporary, reversible or irreversible, direct (an effect that is directly attributable to the proposed development) or indirect (effects resulting indirectly from the development as a consequence of the direct effects), and cumulative, relating to additional changes that may arise when the proposed development is considered in conjunction with other similar developments (see section 6.10).

2.1.5 The methodology for this Landscape and Visual Impact Assessment (LVIA) follows the recommendations and guidance set out in the following reports:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA 3) ¹; and
- Landscape Character Assessment Guidance ²;

2.1.6 GLVIA 3 and the Statement of Clarification 1/13 on the use of GLVIA 3 which was issued by the Landscape Institute, make clear that for non-EIA developments the landscape and visual impact appraisal should consider all types of effects: adverse and beneficial, direct and indirect, and long and short term, as well as cumulative effects. However, none of these effects should be given a judgement involving the terms 'significant' or 'significance'. The GLVIA 3 also stresses that the approach to the assessment needs to be proportionate to the scale of the project being assessed and the nature of the likely effects.

2.1.7 The Landscape Institute produced Advice Note 01/11³ to advise its members on the use of photography and photomontage in landscape and visual assessment; the photographs and photomontages in this LVIA have been produced and presented in accordance with this advice.

2.2 The Study Area

2.2.1 The landscape and visual assessment considers the site and its surroundings, encompassing an area within a 5km radius of the outermost edge of the development. This study area radius has been used as effects on the landscape resource and the character types present within the wider area would be indirect and not significant, given the scale of the proposed development. Furthermore, although the proposed development may be perceptible from the wider area it would appear as a minor feature within the views available. The assessment has been carried out by means of a process of desk and site survey and analysis of this 5km study area.

¹ Guidelines for Landscape and Visual Impact Assessment, Third Edition, by the Landscape Institute and Institute of Environmental Management and Assessment (2013)

² Landscape Character Assessment Guidance for England and Scotland (2002), Countryside Agency in conjunction with Scottish Natural Heritage

³ The use of photography and photomontage in landscape and visual assessment, Landscape Institute Advice Note 01/11 (March 2011)

2.3 Thresholds and Criteria

2.3.1 GLVIA 3 (paragraph 1.20) states that the guidance is “not intended to be prescriptive, in that it does not provide a ‘recipe’ that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances.” This assessment has therefore defined a set of typical criteria to assess the potential landscape and visual effects of the proposed development.

2.4 Methodology for the Assessment of Landscape Effects

2.4.1 The level of the landscape effects identified is determined by a consideration of the sensitivity of the landscape receptors and the magnitude of the effects on the landscape.

2.4.2 The nature or sensitivity of a landscape receptor combines judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape, as defined in the GLVIA glossary and in paragraph 5.39 of GLVIA 3. Paragraph 5.39 of GLVIA 3 also states that LVIA sensitivity is similar to the concept of landscape sensitivity used in landscape planning, but is not the same as it is specific to the particular project or development proposed and the location in question. Thus assessment of sensitivity is not strictly part of the initial baseline study of landscape character; it is considered as part of the assessment of impacts of the development.

2.4.3 Typical criteria for the sensitivity ratings used in the assessment are given in Table 1.

Table 1: Criteria of the assessment of the sensitivity of the landscape receptors	
Level	Typical criteria
High	Small-scale, enclosed, rugged landscapes, of complex land cover. Landscapes with many settlements. Landscapes with no man-made influence. Landscapes with prominent skylines, key views and/or landmark features. High quality and rare landscapes. Scenic, remote, natural landscapes with cultural associations and/or cultural and natural heritage features. Landscapes experienced by residents and visitors whose attention is focused on the landscape.
Medium	Medium-scale, rolling landscapes, with some enclosure and a variety of groundcover. Landscapes with some settlements. Landscapes with some man-made influence. Landscapes with less prominent skylines, key views and/or landmark features. Medium quality and rare landscapes. Medium level of scenic quality, semi-remote, natural landscapes with some cultural associations and/or cultural and natural

Table 1: Criteria of the assessment of the sensitivity of the landscape receptors	
Level	Typical criteria
	heritage features.
Low	Large-scale, open, almost level, smooth landscapes, of uniform land cover. Landscapes with few settlements. Landscapes with man-made influence. Landscapes with no prominent skylines, key views and/or landmark features. Low quality and common landscapes. Modified landscapes with no cultural associations and/or cultural and natural heritage features. Landscapes experienced by a small number of people or from people whose attention is not focused on the landscape.

2.4.4 The nature or magnitude of the effects on the landscape receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the effects.

2.4.5 The landscape receptors include the landscape character of the site, the Landscape Character Area (LCA) the site is within, the surrounding LCAs and the designated landscapes within the 5km study area; this includes the impact on the landscape character of the Gardens and Designed Landscapes within the study area. The impacts on the visual amenity of visitors to Gardens and Designed Landscapes, which are open to the public, are addressed in the visual impact assessment section of this report. The impacts on the sites and settings of the Gardens and Designed Landscapes as designated heritage assets are Cultural Heritage matters which it is not appropriate to address within this landscape assessment.

Susceptibility to Change

2.4.6 This is defined as the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or particular aesthetic and perceptual aspects) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies (see paragraph 5.40 of GLVIA 3).

2.4.7 Table 2 explains how criteria are applied to arrive at an assessment of susceptibility to change.

Table 2: Levels of Landscape Susceptibility To Change	
Level	Typical Criteria
High	These landscapes are likely to be of high value, they may be open or exposed with a remote character and an absence of man-made features. They are often highly visible from adjacent landscapes and exhibit a high density of sensitive landscape areas/features.
Medium – high	These landscapes are likely to be of medium to high value, they may be open or exposed and have few man-made features. They are often inter-visible with adjacent landscapes and exhibit a moderate-high density of sensitive landscape areas/features.
Medium	These landscapes are likely to be of medium value; they may have some enclosure, or be affected by some man-made features, or have little inter-visibility with adjacent landscapes and exhibit a moderate density of sensitive landscape areas/features.
Medium – low	These landscapes are likely to be of medium to low value, have some enclosure, may already be affected by some man-made features, have little inter-visibility with adjacent landscapes or exhibit a moderate-low density of sensitive landscape areas/features.
Low	These landscapes are likely to be of low value, have a strong sense of enclosure that reduces visual sensitivity, are likely to be already affected by man-made features, have reduced tranquillity, are likely to have little inter-visibility with adjacent landscapes and exhibit a low density of sensitive landscape areas/features.

Landscape Value

2.4.8 Assessment of value is concerned with the relative value attached to different landscapes by society. A consideration of value at the baseline stage informs judgements of the significance of effects. Landscapes can be valued by different people for different reasons connected to a range of factors including landscape quality (condition), scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects and associations (see GLVIA 3 Box 5.1 for definitions). This consensus can be recognised at a local, regional or national or international scale. Table 3 explains how criteria are applied to arrive at an assessment of landscape value in this assessment. It is derived from LANDMAP and GLVIA 3.

Table 3: LANDMAP and GLVIA 3 Criteria for the Assessment of Landscape Value			
Value	Typical criteria	Typical scale	Examples
Outstanding	- High importance and rarity - No or very limited potential for substitution	International, National	World Heritage Site, National Park, Area of Outstanding Natural Beauty (AONB).
High	- Medium importance and rarity - Limited potential for substitution - Some or good potential for substitution	Regional, county	Registered Historic Parks and Gardens, Historic Landscapes, Special Landscape Areas
Moderate	Low importance and rarity	Regional, local authority, local community	Undesignated but value expressed for instance in demonstrable use
Low	Low or no importance and rarity	Local, little or no importance	Areas identified as having some redeeming feature or features and possibly identified for improvement. Areas identified for recovery

2.4.9 The EIA Regulations do not require study of whether a development complies with planning policy, this is also the case for a non-EIA LVIA. Planning policy is, however, important and relevant to LVIA when it is a recognition or reflection of the value placed upon a particular landscape or its attributes by society. Thus designations like National Parks and AONB have relevance since they identify a consensus about this aforesaid value. Reference to planning policy can therefore assist the assessor in identifying sensitive receptors.

2.4.10 GLVIA 3 does not deal specifically with landscape capacity, however the Landscape Character Assessment Guidance (2002) recognises that capacity is linked to sensitivity and is generally defined as the amount of change of a particular type that a landscape can accept without adverse effects upon its character or that which can cause a change of character type. A landscape that has high sensitivity may not necessarily have a low capacity to accommodate a particular development and a landscape that as low sensitivity may not necessarily have a high capacity to accommodate a particular development. Study of landscape capacity involves consideration of visibility alongside sensitivity.

Magnitude of Landscape Effects

2.4.11 Table 4 explains how criteria are applied to arrive at an assessment of magnitude and is derived from the GLVIA 3.

Table 4: Criteria for the Assessment of Magnitude of Landscape Effects	
Level	Typical Criteria
High	• Total loss of or major alteration to key features or perceptual aspects of the baseline and/or the addition of new features considered to be totally uncharacteristic when set within the attributes of the receiving landscape • The effects would be of a large scale influencing several landscape character types/areas • The effects would be long term and/or irreversible
Medium	• Partial loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may be prominent but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape • The effects would be at the scale of the landscape character type/area within which the proposal lies • The effects would be medium term and/or partially reversible
Low	• Minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may not necessarily be considered to be uncharacteristic when set within the attributes of the receiving landscape • The effects would be at the level of the immediate setting of the site • The effects would be short term and/or reversible
Negligible	• Very minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that are not uncharacteristic with the surrounding landscape - approximating the 'no change' situation • The effects would be at the site level, within the development site itself • The effects would be very short term and/or reversible

Overall level of the Landscape Effects

2.4.12 Consideration of the sensitivity of the landscape receptors to the development and the magnitude of the change resulting from the development, determines the level of the predicted impact. The relationship between sensitivity and magnitude to reach the level of effect is sometimes presented in the form of a matrix. However, such a matrix may lead to the same weighting of each criteria, which might not always be appropriate and may lead to a formulaic approach, therefore descriptions of how overall effects have been determined are provided (see paragraphs 3.34 and 3.35 of GLVIA 3).

2.4.13 Overall, effects may be adverse, neutral or beneficial, and are assigned a level on the scale: Imperceptible-Slight-Moderate-Substantial-Severe, taking into account

mitigation measures, and different stages of the project lifecycle. Table 5 assigns typical criteria to each level, as applied in this assessment, however it should be noted that various different scenarios of susceptibility to change, landscape value, the size or scale, geographical extent and/or duration and reversibility of effects could apply to result in the overall level of effects as described in the assessment; therefore the criteria in Table 5 are provided as typical examples. Intermediate levels, such as 'slight to moderate' and 'moderate to substantial', may also apply.

Table 5: Criteria for determining level of landscape effects	
Level	Typical criteria
Severe	The proposals are wholly out of character with the existing situation, both locally and on the wider scale, and/or the landscape receptors are of high sensitivity
Substantial	The proposals have a large effect within the context of the wider area, and/or the landscape receptors are of high sensitivity
Moderate	The proposals have a noticeable effect within the context of the wider area, and/or the landscape receptors are of medium sensitivity
Slight	The proposals have some, but only a limited effect within the mainly local context, and/or the landscape receptors are of low sensitivity
Imperceptible	The degree of change is so small as to have little or no effect, and/or the landscape receptors are of low sensitivity

2.4.14 Whilst adverse effects may be identified in connection with a proposed development, this does not imply necessarily that the development taken as a whole would be unacceptable in overall terms.

2.5 Methodology for the Assessment of Visual Effects

2.5.1 As with landscape effects, consideration of the sensitivity of visual receptors (people) and the magnitude of the change determines the level of the predicted effect on views and visual amenity.

2.5.2 The nature or sensitivity of visual receptors considers their susceptibility to the type of change or development proposed and the value people attach to the affected views (GLVIA 3, paragraph 6.31).

2.5.3 The nature or magnitude of the effects on visual receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the effects. In visual assessment the magnitude is also determined by the distance from the viewer, the extent of change in the field of vision, the proportion or number of viewers affected and the duration of activity

apparent from each viewpoint, or a sequence of points that may have transient views, for instance along a road. Greater weight is given to the visual impacts upon public viewpoints than upon views from private properties; this does not however affect the sensitivity of the receptors experiencing views.

Sensitivity of Visual Receptors

- 2.5.4 Visual receptors include the public or community at large, residents, visitors, workers and people travelling through the landscape. The types of viewers, the numbers, the duration of the view and the importance of the view or views of and from valued areas define the sensitivity of a visual receptor.
- 2.5.5 In the context of this development, the scale of the sensitivity of the visual receptors is as outlined in Table 6 and is derived from the GLVIA 3.

Table 6: Criteria for the Assessment of Sensitivity of Visual Receptors	
Level	Typical criteria
High	- Public views within areas of protected landscapes such as National Park and AONB - Users of outdoor recreational facilities including public rights of way, or visitors to heritage assets or other attractions whose attention or interest is focused on the landscape and where tolerance to change is likely to be low - Communities where the development results in changes in the landscape setting or valued views enjoyed by the community - Occupiers of residential properties with views affected by the development - Tourists travelling through or past the affected landscape in cars, on trains or other transport routes whose attention or interest is focused on the landscape and where tolerance to change is likely to be low
Medium	People, such as commuters and hauliers (not tourists) travelling through or past the affected landscape in cars, on trains or other transport routes
Low	- People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape - People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity, not their surroundings, and where setting is not important to the quality of working life - Views from urban roads, footways, railways and industrial areas whose attention may be focused away from the landscape and where tolerance to change is likely to be high

Magnitude of Visual Effects

- 2.5.6 Table 7 explains how criteria are applied to arrive at an assessment of magnitude and is derived from GLVIA 3.

Table 7: Criteria for the Assessment of Magnitude of Visual Effects	
Level	Typical Criteria
High	• Total loss of or major alteration to views and/or the addition of new features that would be very prominent, and/or would greatly contrast with the existing view • Full, open views, experienced for the majority of a journey or full duration of an activity • The views would be close, direct and/or totally occupied by the proposed development • The effects would be long term and/or irreversible
Medium	• Partial loss of or alteration to views and/or the addition of new features that would be prominent, and/or would contrast with the existing view • Partial views, experienced for part of a journey or activity • The views would be middle distance, partially oblique and/or partially occupied by the proposed development • The effects would be medium term and/or partially reversible
Low	• Minor loss of or alteration to views and/or the addition of new features that would not be prominent, and/or would not contrast with the existing view • Glimpsed views, experienced for a small part of a journey or activity • The views would be distant, oblique and/or only a small part of the view would be occupied by the proposed development • The effects would be short term and/or reversible
Negligible	• Very minor loss of or alteration to views and/or the addition of new features that would be almost imperceptible - approximating the 'no change' situation • Very brief glimpsed views • The views would be very distant, very oblique and/or only a tiny part of the view would be occupied by the proposed development • The effects would be very short term and/or reversible

2.5.7 Magnitude is influenced by the effects of distance, which can influence how a wind turbine is perceived. Whether the whole of the turbine is visible or just the blades are seen also influences the degree of change. The extent to which a wind turbine occupies the horizon is also a factor affecting its prominence. Magnitude can vary greatly in differing weather conditions. Direction of light and wind direction at different times of day also alters magnitude of change in a view at some viewpoint positions, so whether it is seen against the background of the sky or the landscape makes a difference. The LVIA has to take into account a worst case scenario and the time duration it is experienced.

Overall level of Visual Effects

2.5.8 As with landscape effects, consideration of the sensitivity of the visual receptors to the development and the magnitude of the change resulting from the development determines the overall level of the predicted impact. Again a matrix is not used;

descriptions of how the overall level of visual effects has been determined are provided.

- 2.5.9 Table 8 assigns typical criteria to each level for visual effects, as applied in this assessment, however it should be noted that various different scenarios of susceptibility to change, the value of views, the size or scale, geographical extent and/or duration and reversibility of effects could apply in determining the overall level of effects as described in the assessment; therefore the criteria in Table 8 are provided as typical examples. Intermediate levels, such as 'slight to moderate' and 'moderate to substantial', may also apply.

Table 8: Criteria for determining the overall level of visual effects	
Level	Typical criteria
Severe	The proposals would dominate views and would be wholly out of character with the existing situation, the changes would be experienced by a very large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Substantial	The proposals would be prominent and contrasting with the existing views, the changes would be experienced by a large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Moderate	The proposals would be noticeable in views but not dominating, the changes would be experienced by a medium number of people, and/or the visual receptors would be of medium sensitivity to the changes.
Slight	The proposals would result in small changes to the views, the changes would be experienced by a small number of people, and/or the visual receptors would be of low sensitivity to the changes.
Imperceptible	The proposals would be imperceptible in views, the changes would be experienced by a very small number of people, and/or the visual receptors would be of low sensitivity to the changes.

- 2.5.10 Again, whilst adverse effects may be identified in connection with a proposed development, this does not imply necessarily that the development taken as a whole would be unacceptable in overall terms.

- 2.5.11 It should be noted that the overall level of visual effects upon residential properties is derived from a consideration of the effects of the proposed development on the overall visual amenity of the property. This encompasses not only views from inside the buildings, but those from the curtilage and garden spaces as well as those from driveways.

2.6 Software and hardware tools

2.6.1 ZTV and photomontages were produced in accordance with the methodology outlined in Appendices 2 and 4 respectively. In addition, Wardell Armstrong used the following computer programmes in the preparation of this LVIA:

- AutoCAD software, and
- MapInfo, a Geographical Information system (GIS).

2.6.2 Hardware included:

- an accurate Global Positioning System (GPS) to position the photoview viewpoints,

2.6.3 a digital SLR camera with an equivalent of a 50mm lens, mounted on a stable, levelled tripod with a professional panoramic head attached.

2.7 Zones of Theoretical Visibility Diagrams (ZTVs)

2.7.1 Zones of Theoretical Visibility (ZTVs) are also referred to as Zones of Visual Influence diagrams (ZVIs) or visual envelope maps (VEMs); however, ZTV is the preferred term as it emphasises the key factors of the plans – that they are theoretical and that they indicate potential visibility by coloured shading overlain on an Ordnance Survey background, from the areas in the surrounding landscape in which the Development is theoretically visible. As they are based upon computer modelling of inter-visibility based upon bare ground topography, they do not show the effects of screening of buildings or trees, or of localised changes in the topography that may not be included in the Digital Terrain Model (DTM), and are thus a worst case scenario. They do not convey the nature or significance of effects. The method of production of the ZTVs is explained in more detail in Appendix 2.

2.8 Selection of Viewpoints

2.8.1 Viewpoints are chosen to assist in the study the potential visual effects of a scheme. The principal criterion is that they must be representative of the range of views and viewer types likely to experience the development (paragraphs 6.19 and 6.20 of GLVIA 3). Specific points may also be chosen because they are important existing viewpoints in the landscape.

2.8.2 The first stage in the viewpoint selection for the development was the production of the ZTV drawings to define the potential visibility of the development. Within this

ZTV defined area, a range of viewpoints at different elevations, giving coverage from all compass directions and for the range of viewer types, was selected. Following this, each chosen point was explored on the ground to ensure that it actually illustrated the most open view of the site area and was not, for instance, behind a building or hedge. Equally, foreground detail that distracts from the middle or background of the view or screening may be characteristic of a viewpoint. Therefore a balance has had to be struck in the final positioning of the viewpoints.

2.8.3 View types included:

- areas of high value such as designated landscapes, long distance footpaths and cycle routes etc;
- viewpoints that may have wide panoramic views or by contrast focused views;
- viewpoints at different distances and elevations;
- viewpoints from different aspects;
- viewpoints from which there would only be partial views of the solar farm;
- sequential views, for instance along roads.

2.8.4 Viewer types included:

- views from residences, roads or recreational points where visitors may experience the landscape; and
- viewpoints where viewers would be likely to be stationary or where they would be moving through a landscape.

2.8.5 To ensure that the most open views of the development were selected, a layer shading exercise was carried out using GIS. The result of this exercise is shown in Figure 5 which shows ranges in topography. This meant that when representing views from a road, positions at the higher elevation vantage points, likely to have more or most open views, could be chosen.

2.8.6 To establish a rationale for selection of worst case scenario viewpoints, GIS analysis was used. Sensitive landscape and visual receptors were mapped for the 5km study area. These included features such as historic parks and gardens, visitor attractions and long distance routes. These are mapped on Figure 2 Landscape Designations and Sensitive Receptors.

2.8.7 A list stating why each of the viewpoints was selected can be found in Appendix 3. The selected viewpoints are numbered in a continuous manner, as shown on Figure 6 Viewpoint Location Plan.

2.8.8 A series of photographs were taken during a site visit in June 2014 from the agreed representative viewpoints. The photographs were taken with a digital SLR camera with an equivalent of a 50mm lens, mounted on a stable, levelled tripod with a professional panoramic head attached. This positions the focal centre of the camera lens above the pivot of the tripod and allows the photographs to be stitched together accurately using software. Viewpoints 1 to 8 (Figures 7 to 14), illustrate the site in its context of the surrounding landscape and settlements. The Figures include the following:

- a description of the location (receptor);
- the distance to the location of the proposed solar PV farm;
- the approximate height above sea level of the viewpoint;
- a location map of the viewpoint;
- a description of the existing view, and those during construction and operation;
- descriptions of magnitude of impact and the sensitivity of the visual receptors;
- mitigation measures; and,
- a summary of the potential effect.

2.8.9 Viewpoints were chosen initially to represent views in which the development would in theory be visible, at least in part. However, due to the extensive screening by existing tree and hedgerow cover, the majority of viewpoints represent representative receptors where the development would not be visible.

2.9 Photomontages

2.9.1 The method of producing the photomontages is explained in detail in Appendix 4. The specific viewpoints were chosen because they were considered to be representative of an important / sensitive viewpoint. For each photomontage the photograph of the existing situation and proposed view are included. In accordance with best practice the photomontages have been produced from un-cropped images and they illustrate a 90 degree horizontal angle of view.

2.9.2 Two photomontages have been produced, these are for Viewpoints 3 and 6 (Figure 15 and Figure 16).

2.10 Limitations of Study

2.10.1 Access to private residential properties was restricted to properties with public footpaths passing through their curtilage.

3 LANDSCAPE CHARACTER BASELINE

3.1.1 This section firstly reviews the published landscape character relevant to the 5km study area. The site assessment has then informed a description of the existing baseline condition of the area within the vicinity of the site.

3.2 Character of the 5km Study Area

3.2.1 Reference has been made to published characterisation studies to describe this regional variation in more detail.

Published Strategic Landscape Character Studies

3.2.2 The site is entirely contained within Wales, but is located less than 1km from the English Border. The following landscape character studies provide a strategic assessment of the 5km radius study area:

- Countryside Council for Wales, Regional Landscape Character Areas ⁴;
- Countryside Council for Wales, LANDMAP Aspect Areas ⁵ see Figures 4b to 4f;
- Natural England, National Character Assessment⁶; and,
- The Shropshire Landscape Typology⁷, a county level study.

Regional Landscape Character Assessment (rLCA)

3.2.3 The site is entirely within rLCA 14 Maelor Saesneg/Maelor. The southern part of the study area within England is within National Character Area (NCA) 61 Shropshire, Cheshire and Staffordshire Plain. In addition, a small part of the western extent of the 5km study area within Wales overlaps rLCA 13 Deeside and Wrexham.

3.2.4 The key characteristics of rLCA 14 Maelor Saesneg/Maelor are summarised in Table 9.

⁴ Countryside Council for Wales, Regional Landscape Character Areas (rLCAs) in Wales (DRAFT), 1 February 2011.

⁵ Countryside Council for Wales, LANDMAP Aspect Areas (data collected July 2013).

⁶ A national study developed as part of the Character of England project and published by the then Countryside Agency in 1999, now Natural England, which characterises England into a number of National Character Areas (NCAs)

⁷ Shropshire County Council, September 2006.

Table 9: Key Characteristics of the CCW Regional Landscape Character Area	
Landscape character area	Key characteristics
14 Maelor	• A bedrock geology of sandstone and siltstone/mudstone is overlain in places by glacial till and river alluvium/glaciofluvial drift e.g. the course of the River Dee), giving rise to a gently undulating landform. • Soils overlaying this geology include seasonally wet deep red loams and clays associated with the glacial till deposits and deep loams associated with glaciofluvial and river terrace drift material. • Predominant land cover is pastoral agriculture, interspersed with mixed native Enclosure field boundary hedgerows with hedgerow oaks, forming a geometric field pattern of medium scale. • Fields are interspersed with occasional blocks of small scale deciduous farm woodland. A larger scale arable field pattern persists in parts of the character area to the east. • Localised land cover variation is provided by the hydrology, including seasonally wet/groundwater dependant meres and mosses, and the course of the River Dee. • Scattered field ponds and mosses such as Fenn's Moss in the south east are a distinctive feature. • Much of the pastoral landscape to the west of the character area incorporates relics of the medieval open field system and earthworks, in addition to early, relatively small scale parliamentary Enclosure. • Prehistoric ritual and funerary sites and medieval, moated/manorial sites are apparent within the character area. • A unified agricultural landscape of simple composition, with texture provided by a variety of land cover elements including pasture, rush/marsh, woodland and meres. • Settlement is defined primarily by compact nucleated villages often of medieval formation, e.g. Bangor on Dee/ Overton, with sandstone, red brick and grey slate frequently evident. • A small part of Wrexham, including the industrial estate, which lays on a bedrock geology of sandstone has been included within <i>Maelor</i> on geological grounds.

Landmap

3.2.5 The site lies within the following Landmap aspect areas:

- WRXHMGL094, Wallington (Geological Landscape);
- WRXHMCL037, Maelor Saesneg West (Cultural Landscape);
- WRXHMHL026, Brynhovah (Historic Landscape);
- WRXHMLH053, Overton Grassland and Pond-scape (Landscape Habitats); and,
- WRXHMVS040, English Maelor (Visual and Sensory).

The description of these can be found in Table 10.

Table 10: Landmap Aspect Areas				
Area Name	Area ID	Description	Overall Evaluation (Taken from LANDMAP)	Guidelines
<i>Geological landscape</i>				
Wallington	WRXHM GL094	Central section of extensive glacial clay (Quaternary, Pleistocene) dominated platform south of the Dee valley in the Overton to Tallarn Green area. Forms a broadly NNESSW orientated area between the Millbrook and Emral Brook valleys, rising from around 1520m above sea level in the N to around 60m in the S (northern area is generally flatter however). Surface characterised by many small ponds. Includes a small area of river terrace adjacent to the Emral Brook near Worthenbury.	Moderate	Long Term (Ensure that no significant geological or geomorphological features are lost or damaged (e.g. due to development, forestry, etc).)
<i>Cultural landscape</i>				
Maelor Saesneg West	WRXHM CL037	Flat fertile land on the western fringes of Shropshire and Cheshire and very untypical of Wales; unchanged though the historic landscape might be, it is clear that farming in the area is going through profound change.	Outstanding (Of national value as an historic landscape.)	Medium Term (Liaison with agricultural sector)

Table 10: Landmap Aspect Areas				
Area Name	Area ID	Description	Overall Evaluation (Taken from LANDMAP)	Guidelines
Historic landscape				
Brynhovah	WRXHM HL026	A large complex area of mixed irregular fields and discrete settlements lying to the east of the Dee. The fields are predominantly hedged although these have occasionally been replaced by post and wire fences, and are interspaced with a few small areas of woodland much of which lines small stream valleys. The settlement is dominated by the villages of Overton, BangorlsyCoed and Penley and the smaller hamlet at Lightwood Green. Overton and Bangor both have medieval origins, the former being in fact a small planned medieval borough rather than a village, while the latter has grown up in a rather more piecemeal fashion around a parish church although it may be an older settlement surrounding a now vanished early medieval monastery. Penley and Lightwood Green are probably rather younger with both growing up within the past 300 years around medieval farms. Penley also saw rapid expansion in the second world war with the building of a US military hospital in 1942.	Outstanding	None.
Landscape habitats				
Overton Grassland and Pond-scape	WRXHML H053	An undulating area of clayey pastures and grassland south east of the River Dee, forming a patchwork of fields with hedges, scattered trees, wet woodlands and an extremely high density of ponds. There are recorded sightings of great crested newts, barn owl and brown hare. There are two SSSIs, on areas of unimproved calcareous clay pastures, unusual in Wales, as well as a number of local wildlife sites, mostly small areas of	High	Immediate (Increase number and condition of ponds.) Medium Term (Where hedges are gappy, replant and lay.) Medium Term (Retain potential green networks and develop green networks.)

Table 10: Landmap Aspect Areas				
Area Name	Area ID	Description	Overall Evaluation (Taken from LANDMAP)	Guidelines
		woodland and wet grasslands.		
Visual & sensory				
English Maelor	WRXHM VS040	An attractive archetypal rolling farming landscape with elements of estate farming and a pleasant mix of small to medium field patterns and woodland blocks and copses. There is gentle variation in topography, with small wooded valleys, and higher areas overlooking Dee valley. Subtle differences, shown by CPAT assessment of Maelor Saesneg (2003). Main land use is agriculture with the emphasis on dairy farming, some arable. Field boundaries are generally well defined with mature hedges and hedgerow trees (often oaks) and small lanes. The area feels relatively settled and safe with a low proportion of out of scale or modern development. The area forms the southern and eastern border of the county and therefore the Welsh/English border. Visually and physically the area feels far more closely associated with the English landscape of North Shropshire and Cheshire than the "typical" or "archetypal" Welsh landscape, with the result that the area feels quite separate from the remainder of the county and country and is an uncommon landscape type for Wales. The aspect is the transition zone and border between England and Wales.	Moderate	Medium Term (Maintain traditional land use and management. Where possible reintroduce traditional land management techniques). Medium Term (Enhance biodiversity and habitat types, improve age range in vegetation cover and promote biodiversity). Medium Term (Preserve historic landscape character). Medium Term (Encourage sensitive farm diversification, manage recreational use).

3.3 Valued areas and sensitive receptors

3.3.1 Valued areas reflected in designations often cross character area boundaries; therefore to assess the overall effects the total area of the designation needs to be considered as a whole. Nationally important landscape designations are mapped on

Figure 2 which also shows other areas of landscape interest which are of regional or local importance.

- 3.3.2 The site falls entirely within the Maelor Saesneg Area of Historic Landscape and there are three sites which are listed on the national Register of Parks and Gardens⁸ which are also within the 5km study area and the ZTV: Overton St Mary's Churchyard and the neighbouring sites of Rosehill and Erbistock Hall.

The Maelor Saesneg Area of Historic Landscape

- 3.3.3 The Maelor Saesneg Area of Historic Landscape is one of 58 "*landscapes of outstanding or special historic interest which are considered to be the best examples of different types of historic landscapes in Wales.*"⁹ Historic Landscape Characterisation has further subdivided the Maelor Saesneg into a series of character areas and the site falls within the boundaries of the Penley character area (HLCA 1123). This is described on the Clwyd-Powys Archaeological Trust website¹⁰ as follows:

"The area occupies an area of undulating farmland between about 30-70 metres above Ordnance Datum, gently sloping to the north, dissected by wooded stream valleys which feed the Emral Brook. Field patterns are dominated by large and small irregular field boundaries, with an area of strip fields in the Park Lane and Street Lydan area, though the widespread occurrence of ridge and furrow cultivation within the character area probably indicates the former presence of medieval open field cultivation which is not clearly represented in the field pattern. Numerous marl pits are scattered throughout the area, many represented by ponds. Modern land use is predominantly pasture, fields being bounded with multi-species hedges with scattered mature oak trees in the hedge lines."

Overton St Mary's Churchyard

- 3.3.4 Overton St Mary's Churchyard lies approximately 2km to the north-west of the site and is a small Grade II listed landscape described as "*Churchyard with obvious designed element. Very ancient yews, described as one of the Seven Wonders of Wales.*"

⁸ Register of Landscapes of Historic Interest in Wales, Countryside Council for Wales in partnership with Cadw and the International Council of Monuments and sites (ICOMOS UK).

⁹ <http://cadw.wales.gov.uk/historicenvironment/protection/historiclandscapes/?lang=en>

¹⁰ <http://www.cpat.org.uk/projects/longer/histland/maelor/1123.htm>

Erbistock Hall / Rosehill

- 3.3.5 Erbistock Hall and Rosehill are adjoining Grade II listed sites with contiguous boundaries each lying 4km to the north-west of the site boundary at their respective closest points. Erbistock Hall is described in the Register as a “Partly terraced garden probably dating to the early eighteenth century, with well preserved, very fine yew hedging and topiary of some antiquity. Garden incorporates a well preserved early eighteenth-century dovecote.” Rosehill is a “*Landscape park in picturesque location overlooking the river Dee, surviving in its entirety. House and garden in fine situation overlooking the park and river, with the unusual survivals of a box-edged Edwardian parterre and a well preserved and fully productive walled kitchen Garden.*”

Country Parks

- 3.3.6 There is only one Country Park within the 5km study area. The Mere at Ellesmere in Shropshire is approximately 4.3km to the south-east of the site at its closest point, but is not within the ZTV.

The character of the site and its immediate vicinity

- 3.3.7 The site lies between Trench Farm to the south and Lightwood Green to the north and is bounded on the east by the route of a former railway line. It occupies farmland which wraps around the southern and eastern sides of Lightwood Plantation, an area of mixed plantation woodland.

Settlements and individual properties

- 3.3.8 The 5km study area is rural in nature and there are five main, but small settlements, the villages of Overton, Bangor on Dee, and Penley within Wales and the town of Ellesmere and village of Dudleston Heath in England. However, of these only Overton, 1.75km to the northwest of the site at its closest point, and Penley, 2.5km to the east of the site at its closest point, are within the ZTV.
- 3.3.9 There are a numerous scattered properties within the study area and notably along the roads to the north, south-east and west. The closest residential dwellings to the site boundary are Trench Farm 230m to the south, Greenfield House 275m to the north, The Croft 340m to the east and Maes Lewis 525m to the west.

Landform and drainage

3.3.10 The landform of the study area is shown on Figure 5. The site itself lies on land which slopes gently downhill to the north towards the River Dee. At its southern extent, the site is approximately 78m AOD and drops to 59m AOD at its northern end. Gradients within the site are typically in the order of 1:33, however the field at the northern end is shallower with gradient in the order of 1:90.

3.3.11 There are numerous small ponds throughout the farmland within the study area with examples within the eastern boundary of the site at the southern and northern extents. A stream runs northward through woodland which adjoins the western boundary of the site, ultimately connecting in to the River Dee at Bangor on Dee.

Land cover and land use

3.3.12 The site and the study area in general consists of farmland with a mixture of arable and pasture for cattle and sheep. This is broken up by a series of woodlands and plantations often associated with watercourses, such as Lightwood plantation which adjoins the north-west corner of the site. In addition, the extensive network of mature field boundary hedgerows with mature trees adds to the impression that this is a well-wooded landscape. Small ponds are scattered throughout the farmland, with some showing signs of ecological succession to scrub.

3.3.13 There are few man-made features within the site, however two small fields at the western corner of the site have been given over to a motocross circuit. A low-voltage overhead electricity line carried on wooden poles cuts across the south-eastern corner of the site before running along the line of the former railway adjacent to the eastern boundary.

3.3.14 To the north of the site, the small cluster of houses at Lightwood Green lies adjacent to the timber yard at the Lightwood Green Industrial Estate. Some farm units such as Trench farm itself are extensive with large barns, outbuildings and silos, and off the A528 to the west, the Eastwick Plant Centre includes glasshouses and poly-tunnels.

3.3.15 Surrounding land use is also overly agricultural in nature, however there are signs of diversification, with a number of caravan sites including the one at Trench Farm itself which also has a number of fishing ponds.

Transport corridors and rights of way

3.3.16 The A539 runs approximately east-west through the study area and passes the site to the north, approximately 665m at its closest point. The A528 runs north-south through the study area passing 555m to the west of the site. These two roads are linked to the south and east of the site by a minor road Red Hall Lane which is just over 200m away at its closest point to the south-southeast.

3.3.17 As illustrated by Figure 3 Access Network there is an extensive network of public rights of way within the study area. However, though there are some signposts, stiles and some waymarkings along routes, field work undertaken in June 2014 revealed that many of those in the vicinity of the site are used little by the public for recreation, indeed, some access points have become overgrown with scrub or been fenced off and are not signposted.

3.3.18 Figure 3 shows that there is only one regional cycle route and one local cycle route within the 5km study area. The regional Wem and Ellesmere Cycle Route 31 meanders east-west through the southern extent of the study area passing 3.6km to the south-east of the site at its closest point. The two routes meet approximately 4.5km to the south of the site at Ellesmere but outside the ZTV. The Mere at Ellesmere provides the only Country Park within the 5km study area, however this is not within the ZTV.

4 BASELINE VISIBILITY

4.1 Visibility of the existing site

4.1.1 The land in which the solar PV development would be sited has very limited visibility. This is due to the dense network of hedgerows and trees which provides a highly effective visual screen from the vast majority of potential public and residential viewpoints. Land within the site can in fact only be glimpsed at close quarters from adjoining public rights of way through a small number of gaps in the boundary hedgerow. Visibility of the site is illustrated by the photoviews Views 1 to 8 (Figures 7 to 14).

5 ASSESSMENT OF LANDSCAPE EFFECTS

5.1 Summary of potential effects of aspects of the development

5.1.1 Table 11 summarises the potential effects of elements of the development.

Table 11: Summary of potential effects of aspects of the development	
Aspect of the development	Potential change
Construction phase	
Construction vehicle movement	Physical characteristics: not affected
	Perceptual characteristics: Increase in activity for short time leading to some loss of tranquillity
Construction of access track and installation of solar panels, inverter cabins and associated development	Physical characteristics: loss of small amount of land and introduction of new elements in pattern but existing field patterns retained
	Perceptual characteristics: potential loss of naturalness
Storage areas including compound with stockpiles of materials	Physical characteristics: new incongruous elements contained within existing pattern
	Perceptual characteristics: potential effect upon rural character
Construction of the grid connection	Physical characteristics: temporary change of linear routes of land while installing underground cables
	Perceptual characteristics: potential effect upon rural character
Operational phase	
Operational solar PV panels	Physical characteristics: introduction of a new static structures making a new strong pattern
	Perceptual characteristics: potential localised effect upon remoteness/naturalness
Land use change to solar PV site	Physical characteristics: small loss of elements and no change to existing pattern, scale not effected
	Perceptual characteristics: small effect upon remoteness
Operational use of access track	Physical characteristics: no loss of elements and existing pattern, scale not affected. Track is in existing use for access to farm / stables.
	Perceptual characteristics: barely perceptible effect upon remoteness
Grid connection	Physical characteristics: the cables would be underground and follow the route of the access track therefore once the ground cover is restored there would be no impacts
	Perceptual characteristics: the cables would be underground and follow the route of the access track therefore once the ground cover is restored there would be no impacts
Decommissioning phase	
Decommissioning vehicle movement	Physical characteristics: not affected
	Perceptual characteristics: the increase in activity for short time leading to some loss of tranquillity
Removal of solar PV panels	Physical characteristics: restoration of small amount of land and removal of elements in pattern but existing patterns retained
	Perceptual characteristics: potential restoration of naturalness

- 5.1.2 The assessment of the operational effects principally addresses the potential effects of the solar panels themselves as these would be the most prominent and significant features of the development, with the most potential to result in significant effects.

5.2 **Assessment of landscape effects**

Landscape sensitivity

- 5.2.1 The Maelor Saesneg Area of Historical Landscape within which the site is located is high in overall value, however the value of the site itself is reduced because of the existing motocross track. The site is in a rural area with few man-made features but an extensive network of mature woods, plantations, hedgerows and trees. These and the existing dense and mature tree and hedge cover around the site ensures that there is very little intervisibility with its surroundings. The susceptibility of the site and its surroundings to change has therefore been assessed as low. The overall sensitivity of the site and surrounding area to solar PV development is assessed as *medium*.

Potential landscape effects during construction

- 5.2.2 The construction period for the proposed development would be short term and temporary in nature. The construction would affect both the physical characteristics of the site, such as the land use, land cover and pattern of the site, and the perceptual characteristics of the local area, such as tranquillity.
- 5.2.3 Some indirect impacts on the wider area would arise from the visual impacts associated with the construction works. However during this time, most impacts of the construction activities on the landscape character of the site and the surrounding area would be of a highly localised nature and therefore, assessed as slight adverse.
- 5.2.4 Once the construction elements are removed, the additional temporary disturbance would cease.

Potential landscape effects during operation

- 5.2.5 Landscape effects during operation would in principle comprise indirect effects arising from visual impacts from the solar PV development. Such visual effects in principle would derive from contrasts in colour when viewed against a landscape backdrop.

Approach

- 5.2.6 To assess the potential impacts on the landscape character, the sensitivity of the area with respect to the solar PV development was considered. The results are presented in Table 12. The assessment was extended using the key physical and perceptual characteristics identified within the regional Landscape Character Assessment to consider whether these could be materially affected by this development. Sensitivity to a solar PV farm constructed within the character area depends on the defining characteristics. The defining characteristics of a character area which is not the host character area can only be predominantly affected if one of their defining characteristics is views of the host character area.
- 5.2.7 The extent of the potential effects over the wider character area was assessed spatially, by considering how much of the character area would be influenced. How much of the solar PV development would potentially be viewed and distances were factored in to arrive at a level of effect. This is inevitably linked to the extent of direct inter-visibility of the area in question with the development.
- 5.2.8 However, sequential experience of change could also amount to a change of the experience of parts of an LCA outside the immediate ZTV of the development. If a large proportion of an LCA were to be adversely affected, then this would be likely to lead to loss of character over the whole of the LCA. The converse is also true.
- 5.2.9 The impacts on each LCA were assessed by consideration of the sensitivity of the area to the proposed development, the perceptibility within the LCA (not to be confused with inter-visibility) and the value, all taken together.
- 5.2.10 Assessment of impact upon landscape character in general cannot therefore just be carried out by considering discrete viewpoints alone, however representative they may be.

Character of the setting

Landscape Character Assessment of Wales Regional Landscape Character Area

- 5.2.11 Table 12 summarises the potential effects upon the Landscape Character Assessment of Wales regional landscape character area 14 Maelor.

Table 12: Potential effects of the Development on the landscape character of the 'Maelor' LCA (14)

Key Characteristic	Effect of the proposed solar PV development
Geology: A bedrock geology of sandstone and siltstone/mudstone is overlain in places by glacial till and river alluvium/glaciofluvial drift e.g. the course of the River Dee), giving rise to a gently undulating landform. A small part of Wrexham, including the industrial estate, which lays on a bedrock geology of sandstone has been included within <i>Maelor</i> on geological grounds.	No physical change to geology.
Soils: Soils overlaying this geology include seasonally wet deep red loams and clays associated with the glacial till deposits and deep loams associated with glaciofluvial and river terrace drift material.	Limited direct effects within part of the site only due to the construction of access track within the site.
Land cover: Predominant land cover is pastoral agriculture, interspersed with mixed native Enclosure field boundary hedgerows with hedgerow oaks, forming a geometric field pattern of medium scale. Localised land cover variation is provided by the hydrology, including seasonally wet/groundwater dependant meres and mosses, and the course of the River Dee.	Limited direct but temporary effects within the site boundary only due to location of site access track and transformers and substations. Solar PV development permits the retention of pasture and continuance of grazing by sheep. All existing trees and hedges within the site would be retained and existing gaps within the boundary hedgerow on the west of the site replanted.
Field pattern: Fields are interspersed with occasional blocks of small scale deciduous farm woodland. A larger scale arable field pattern persists in parts of the character area to the east.	The existing field pattern would be unchanged with existing hedgerows and trees retained.
Drainage: Scattered field ponds and mosses such as Fenn's Moss in the south east are a distinctive feature.	Existing field ponds within the site would be retained within the development.

Table 12: Potential effects of the Development on the landscape character of the 'Maelor' LCA (14)		
Key Characteristic		Effect of the proposed solar PV development
Historic landscape: Much of the pastoral landscape to the west of the character area incorporates relics of the medieval open field system and earthworks, in addition to early, relatively small scale parliamentary Enclosure. Prehistoric ritual and funerary sites and medieval, moated/manorial sites are apparent within the character area.		Existing field boundary features including hedgerows and trees would be retained within the proposed development and so the remaining historic landscape pattern would be retained. Due to existing vegetation screening there would be very little effect on the surrounding historic landscape and the pastoral nature of the landscape would be unaffected.
Aesthetics: A unified agricultural landscape of simple composition, with texture provided by a variety of land cover elements including pasture, rush/marsh, woodland and meres.		Though the solar PV development would introduce a new man-made element with different colour and texture other landscape features within the site (trees, hedges and ponds) would be retained along with existing pasture for sheep grazing. The retention and gapping up of perimeter boundary hedgerow would ensure that the perception of the site from outside would be maintained and the effect upon the aesthetics of the LCA as a whole would be negligible.
Settlement: Settlement is defined primarily by compact nucleated villages often of medieval formation, e.g. Bangor on Dee/ Overton, with sandstone, red brick and grey slate frequently evident.		No change.
Sensitivity to the Development	Magnitude of effects	Overall level of effects
Medium - High	Negligible-low	Slight adverse

5.2.12 In summary, the proposed solar PV development would result in some highly localised landscape effects and so would affect only a very small part of the Maelor LCA.

5.2.13 As existing tree and hedgerow screening ensures that all effects would be contained within the Maelor LCA, there would be no adverse indirect effects upon the surrounding LCAs.

Landmap Aspect Areas

5.2.14 Table 13 summarises the potential effects upon the Landmap Aspect Areas which the site falls within. This is done by assessing the compliance or otherwise of the proposed development with the published guidelines for each Aspect Area.

Table 13: Landmap Aspect Areas				
Area Name	Area ID	Guidelines	Compliance with Guidelines	Assessment
Geological landscape: Wallington	WRXHM GL094	Long Term (Ensure that no significant geological or geomorphological features are lost or damaged (e.g. due to development, forestry, etc).)	Complies – No impact on geology or geomorphology.	Magnitude: Negligible; Level of effects: imperceptible
Cultural landscape: Maelor Saesneg West	WRXHM CL037	Medium Term (Liaison with agricultural sector)	Not applicable	Not applicable
Historic landscape: Brynhovah	WRXHM HL026	None.	Not applicable	Not applicable
Landscape habitats: Overton Grassland and Pond- scape	WRXHML H053	Immediate (Increase number and condition of ponds.) Medium Term (Where hedges are gappy, replant and lay.) Medium Term (Retain potential green networks and develop green networks.)	Ponds – no change, existing ponds retained. Hedges – small number of gaps to be replanted. Green networks – no change, existing rights of way unaffected.	Magnitude: Negligible; Level of effects: imperceptible
Visual & sensory: English Maelor	WRXHM VS040	Medium Term (Maintain traditional land use and management. Where possible reintroduce traditional land management techniques). Medium Term (Enhance biodiversity and habitat types, improve age range in vegetation cover and promote biodiversity). Medium Term (Preserve historic landscape character). Medium Term (Encourage sensitive farm diversification, manage recreational use).	Land use – temporary change (solar farm) which allows existing grazing to continue. Biodiversity – potential for enhancement, see ecology section in planning application. Historic landscape character – field pattern retained. Farm diversification – temporary addition to use of existing farmland.	Magnitude: Negligible; Level of effects: imperceptible

5.2.15 As a temporary development, the proposed solar PV farm at Trench Farm would have very little effect on the Landmap Aspect Areas within which it is located. Effects would be localised in nature, negligible in magnitude and imperceptible in overall effect.

Valued areas

- 5.2.16 The value of the Area of Historic Landscape is considered to be high however, because of existing vegetation screening, the sensitivity of this to the proposed development is considered to be low. The retention of existing landscape and boundary elements and the visual screen afforded by existing tree cover within and adjacent to the site would ensure that effects on the Maelor Saesneg Area of Historic Landscape would be highly localised. For the most part these would be contained within the site boundaries with very limited indirect effects on the immediate surroundings. Overall effects on the Maelor Saesneg Area of Historic Landscape would be low in magnitude and slight adverse in overall level.
- 5.2.17 The landscape value of the Gardens and Designed Landscapes is considered to be high and the sensitivity of these to development is also considered to be high. The density of the tree and hedgerow cover within the study area would however ensure that there would not be any indirect effects on them as a result of the solar PV development at Trench Farm.
- 5.2.18 The landscape value and sensitivity of Country Parks is considered to be High. However as the Mere at Ellesmere is not within the ZTV, the development would not result in any adverse effects upon it.

Potential Landscape Effects after Decommissioning

- 5.2.19 At the end of the solar farms life, it would be dismantled and the site restored to agricultural land. The actual removal of the solar farm's structures and infrastructure facilities at decommissioning would result in some temporary construction impacts, similar to the initial construction phase. Once this is complete and assuming there will be no requirement to remove any vegetation, there would be no adverse residual impacts on the site or the setting. The landscape effects of the scheme are reversible in the longer term.

5.3 Assessment of Visual Effects

- 5.3.1 Following desk based study, a series of field investigations has verified the main settlements, roads, railways, footpaths, and cycle routes (visual receptors) from which the site can be seen within an approximate 5km radius study area. The process of selecting viewpoints has already been explained (Section 2.8). Individual

residential properties within 2km of the site are also addressed, although it is not possible to enter the curtilage of the properties. Using the ZTV drawing (Figure 1) and knowledge of the site, adverse effects on these receptors are detailed below.

- 5.3.2 Representative visual effects experienced by key sensitive receptors are illustrated by photographs on Figures 7 to 14.

Potential Visual Effects during Construction

- 5.3.3 Table 11 identifies possible construction impacts. For the receptor groups that would experience visual effects during operation, all the effects are assumed to be adverse during the construction phase but the significance of these adverse effects would be limited by the short duration of operations.

Potential Visual Impacts during Operation

Residential Receptors

- 5.3.4 These comprise individual properties and settlements, all of which are considered high sensitivity receptors. The main settlements within 5km of the site which are also within the ZTV are considered in Appendix 5.1 and the potential significance is identified and summarised below. Potential inter-visibility of other smaller settlements can be determined from the ZTV drawings. Individual and groups of properties within 2km of the site are also addressed in Appendix 5.2 in a similar way.
- 5.3.5 It has been assessed that there would not be any high levels of effects on any of the residential receptors in the 5km study area as a result of existing vegetation screening.

Transport and Rights of Way Network

- 5.3.6 These include the roads and cycle routes (Figure 3) within the 5km study area and within the ZTV (Appendix 5.3). Not all individual public rights of way and minor roads and lanes have been considered separately as there are many within the 5km radius study area and effects were found to be similar.
- 5.3.7 There would be no high levels of adverse effects on the surrounding road and cycle networks and also on the majority of the public rights of way in the study area. This is a result of the dense pattern of mature hedgerows, hedgerow trees and woodlands and plantations within the study area and those adjoining the site

boundaries in particular. These form a highly effective visual screen for the existing site and would also screen the proposed development. There would be some very localised impacts on short sections of two footpaths, Footpaths 14 and 33 (Overton Parish) which run alongside the site boundary where there are a number of gaps in boundary hedgerows. Impacts on these paths would, in general, be negligible with imperceptible levels of overall effects, however, for 3 short (c10m long) sections of Footpath 14 along the western boundary of the site and a single 40m long section of Footpath 33 at the south-eastern tip of the site where there are gaps in the boundary hedgerow and the solar PV arrays would be visible at fairly close quarters, magnitude would be medium and overall level of effects moderate, adverse.

Recreational Receptors

- 5.3.8 A number of recreational receptors, comprising caravan parks, public open space and fisheries have been identified within the 5km study area and within the ZTV. It has been assessed (Appendix 5.3) that the proposed solar PV site would not have any visual impacts upon these receptors as all views would be screened by existing intervening vegetation. Such impacts would be negligible in magnitude and imperceptible in overall level of effects.

Potential Visual Effects after Decommissioning

- 5.3.9 The actual removal of the solar PV development and the associated above ground structures and infrastructural facilities at decommissioning would result in some temporary effects but once the solar PV development is dismantled the site would be restored and the long term visual effects caused by its presence would disappear. The effects of the visible elements of the development are reversible.

6 MITIGATION MEASURES

- 6.1.1 Mitigation measures are required in order to avoid, reduce, remedy or compensate for any adverse effects of the development. The principal of mitigation commences with the design of the development and is an iterative process, in that measures are taken, wherever possible, to adjust the design to minimise adverse effects. This has already been undertaken by locating the solar farm on land that is well contained by the existing local vegetation cover and by ensuring that the existing hedgerows, trees, ponds and pasture within the site are retained.

6.1.2 Further mitigation in the form of limited planting to 'gap up' the small number of gaps in the boundary hedgerows is recommended and although this would take time to establish and beneficial effects in the short term would be limited, the new hedgerow planting would establish and strengthen landscape boundary features and reduce visual impacts in the longer term. Such planting would provide benefits to the landscape character of the locality in the long term following the decommissioning and removal of the solar PV farm.

7 RESIDUAL EFFECTS

7.1.1 Because the mitigation for the potential landscape and visual effects of the development has been incorporated into the design of the development, the assessment of effects above has already presented the residual effects after mitigation and therefore there are no further effects to assess.

8 CUMULATIVE EFFECTS

8.1.1 According to Wrexham County Borough Council ¹¹, Shropshire Council¹², and The Department of Energy and Climate Change ¹³, at 24th June 2014 there were no other existing, approved or in planning large scale (above 250kW) solar farm schemes within 2km of the site. As such, there would be no scope for any cumulative impacts of the proposed development.

9 SUMMARY AND CONCLUSIONS

9.1 Landscape effects

9.1.1 The proposed solar PV development at Trench Farm near Overton in the Wrexham County Borough Council area would be located within an area identified within the Landscape Character Assessment of Wales as regional landscape character area 14 Maelor. In addition it is located within the following Landmap aspect areas:

- WRXHMGL094, Wallington (Geological Landscape);
- WRXHMCL037, Maelor Saesneg West (Cultural Landscape);
- WRXHMHL026, Brynhovah (Historic Landscape);

¹¹

http://planning.wrexham.gov.uk/Planning/lg/plansearch.page?org.apache.shale.dialog.DIALOG_NAME=gfplanningsearch&Param=lg.Planning

¹² <http://planningpa.shropshire.gov.uk/online-applications/search.do?action=simple>

¹³ <https://restats.decc.gov.uk/cms/planning-database/>

- WRXHMLH053, Overton Grassland and Pond-scape (Landscape Habitats); and,
- WRXHMVS040, English Maelor (Visual and Sensory).

9.1.2 Existing tree and hedgerow screening ensures that all effects would be contained within the Maelor LCA and the above Landmap Aspect Areas and all effects would be highly localised in extent. The development would not result in high levels of adverse effects upon these character areas and there would be no indirect adverse effects upon the surrounding LCAs.

9.1.3 The site falls entirely within the Maelor Saesneg Area of Historic Landscape and as above, the visual screen afforded by existing tree cover within and adjacent to the site would ensure that effects on the Maelor Saesneg Area of Historic Landscape would be highly localised. For the most part these would be contained within the site boundaries with very limited indirect effects on the immediate surroundings. There would be no high levels of adverse effects on any other valued areas within the 5km study area.

9.2 Visual effects

9.2.1 Though the ZTV for the proposed solar PV development shows a large part of the land within 2km of the site boundary and also of the land within the northern half of the 5km study area, in reality, the mature hedges and trees adjoining the site as well as the extensive network of hedges, trees and woodlands within the study area would ensure that the development would in general not result in any adverse visual impacts upon any of the surrounding visual receptors.

9.2.2 There are two exceptions, both public rights of way (#s 14 & 33, Overton Parish) which adjoin the site boundary, where short gaps in the boundary hedgerows would permit views in the site. The development would not however result in high levels of adverse effects at these locations where visual effects have been assessed as being medium in magnitude and moderate, adverse in overall effect.

9.3 Mitigation and Residual Effects

9.3.1 Mitigation measures have been incorporated into the proposals by locating the solar farm on land that is well contained by the local vegetation cover and by ensuring that the existing landscape features of the site are retained. Limited additional planting to gap up short sections of boundary hedgerow which adjoin footpaths 14

and 33 has been proposed in order to further reduce visual impacts upon these receptors.

- 9.3.2 The proposed solar PV farm scheme is designed to be of a temporary nature, which at the end of its life would be dismantled and the site restored to its current condition. The effects of the current scheme are reversible. Therefore, there would be no residual landscape or visual effects.

9.4 **Cumulative effects**

- 9.4.1 There would be no cumulative landscape or visual effects.

9.5 **Overall conclusions**

- 9.5.1 The scheme would result in very few landscape or visual impacts. Those which would occur would be contained within the site boundary or felt by a limited number of adjacent receptors. There would be no high levels of adverse effects.

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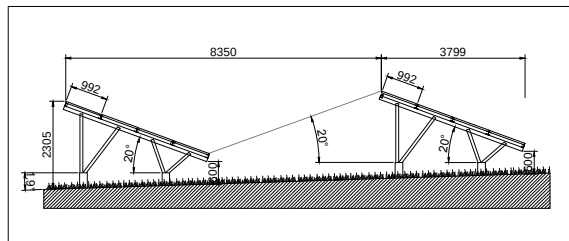
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APPENDIX 1

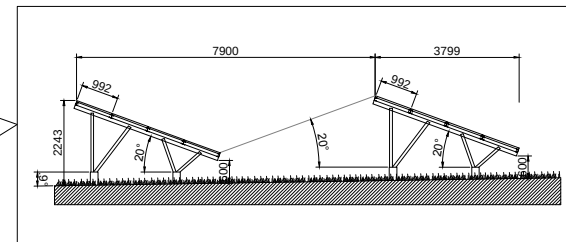
Clients Site Design Plan



Area 213,314 m² (52.71 acres)

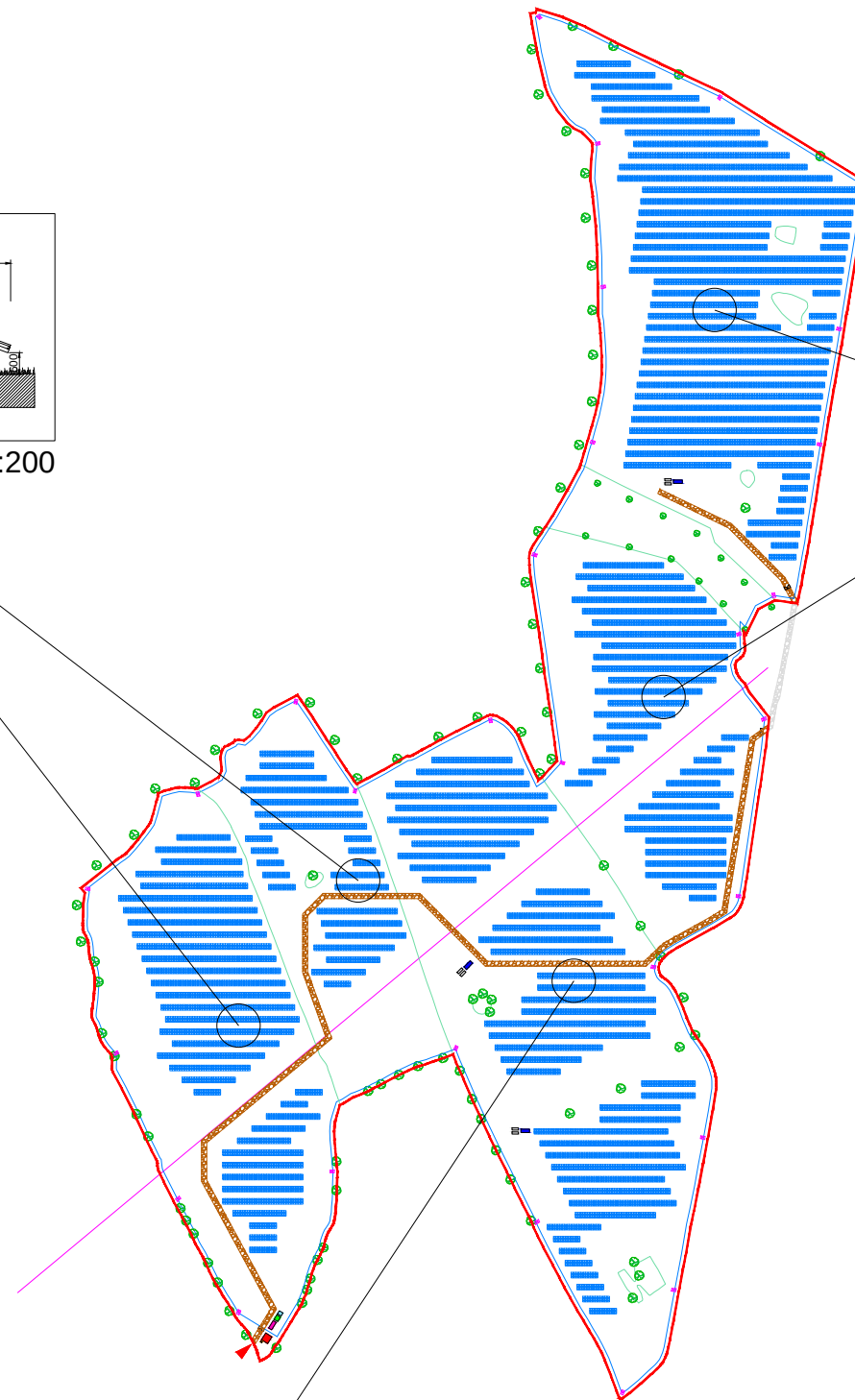


Scale 1:200



Scale 1:200

	Site Boundary
	Site Access
	Security Fence
	Field Boundary
	Module Table 11 x 4
	Module Table 22 x 4
	Field Transformer
	Inverter Station
	DNO Substation
	Client Side Substation
	Communications Building
	Site Transformer (Aux)
	DNO Meter
	Storage Shed
	Access Road
	Compound Area
	Overhead Line
	Tree
	Access Gates
	CCTV
	Temporary Access Road



Scale 1:10000



Revisions:			
2	06/06/14	Fields changed	DA
Rev	Date	Comments	Dwn Chkd

DA	XX	XX	03.06.14
DRAWN	CHECKED	APPROVED	DATE

PROJECT NAME & ADDRESS:

Location: Trench Farm Wrexham

Postcode: LL13 0NA

XX.XXddegrees

XX.XXddegrees

NOTES:

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Paper Size:	Scale:	Sheet:
A3	1:5000@A3	1

CAPACITY:

7.50 MWp

DRAWING TITLE:

Trench Farm Wrexham_Proposed_Layout_Rev 2

DRAWING NUMBER: TCH_01_Rev 2	STATUS: Preliminary
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APPENDIX 2

Methodology for Production of ZTV

Appendix 2

Methodology for producing ZTVs

Introduction

A Zone of Theoretical Visibility diagram (ZTV) illustrates the area of the landscape from which a viewer can theoretically see the object in question. This is often also referred to as the visual envelope and the map as the visual envelope map (VEM), or a Zone of Visual Influence diagram (ZVI). This is a desk-based technique and provides a framework and structure for the subsequent fieldwork. The ZTV represents a 'bare ground' assessment without screening, structures or vegetation.

This kind of information can be manually derived from cross sections but the process is laborious. Computer software is usually now used to provide this information.

Method

The Ground Model

The first step in the production of a ZTV is to obtain a computer representation of the ground surface in the vicinity of the proposed development, referred to as a Digital Terrain Model (DTM).

The data used for this project was obtained from the Ordnance Survey. The DTM for ZTV analysis was derived from their Terrain 50 data.

The DTM consists of height values at each intersection of a 50m horizontal grid. Variations in DTM accuracy are to be expected depending upon the nature of the ground. DTM height accuracy is typically better than one half of the vertical interval of the source contour data. In practice, with a normal contour interval of 10 metres, this results in a height accuracy of up to +/- 5m.

The Model of the Development

To produce a ZTV, the XYZ data of the object under analysis is required. XYZ data is the easting and northing point plus the height or Z co-ordinate of the subject above the ground level.

The XYZ object data for the development is then entered into the ZTV program that uses the DTM to compute theoretical inter-visibility.

APPENDIX 3

Viewpoint Selection

Appendix 3

Viewpoints Selection

Viewpoint Number (for location see Figure 6)	Location description [World co-ordinate grid reference]	Approximate distance and direction from the site	Reason for selection	Receptors
1	Public right of way #15 (Overton Parish) to the north-east side of Old Post Office Farm / Knolton Nursery. [337631, 339523]	560m, West.	Worst case scenario view from the A528 corridor to the west of the site.	Area of Historic Landscape, footpath users, residents (Old Post Office Farm).
2	Field access off A528 Grange Road, at the northern end of Knolton. [337914, 338843]	590m, south-west	Representative view from Knolton and glimpsed view from the A528. Viewpoint also opposite entrance/exit of footpath 10 and Trotting Mare caravan Park.	Area of Historic Landscape, road users, residents (Knolton).
3	Public right of way footpath #14 (Overton Parish) on the western boundary of the site. [338266, 339356]	2.5m, west	Worst case scenario view from public footpath along western site boundary.	Area of Historic Landscape, footpath users.
4	Public right of way footpath #33 (Overton Parish) on the northern side of the Trench Farm Caravan Park. [338549, 339245]	10m, southwest	Worst case scenario view from just outside the caravan park.	Area of Historic Landscape, footpath users.
5	Red Hall Lane at a gap in the roadside hedge to the south-west side of The Croft. [338919, 339276]	325m, south-east	Worst case scenario (gap in hedge) view from the public road to the south-east. View representative of that from The Croft.	Area of Historic Landscape, road users, residents (Croft).
6	Public right of way footpath #33 (Overton Parish) to the east of the site. [339001, 339732]	330m, east	Representative view from public RoW to the east.	Area of Historic Landscape, footpath users.
7	Public right of way footpath #33 (Overton Parish) to the north east of the site. [339021, 340290]	356m, north-east	Representative view from public RoW to the north-east.	Area of Historic Landscape, footpath users.
8	Red Hall Lane at entrance to footpath #26 (Overton Parish). [339288, 339544]	650m, east	Worst case scenario (gap in hedge) view from the public road to the east. View representative of that from public right of way and adjacent residences.	Area of Historic Landscape, footpath users, road users, residents (Red Hall Farm / Tir Barwn).

APPENDIX 4

Methodology for Production of Photomontages

Appendix 4

Methodology for producing Photomontages

Use of photomontage

Photomontages are intended to provide an indication of how a photograph from a chosen viewpoint would look if the development were already operational. Therefore they must be constructed accurately in order that they can be demonstrated to be a fair representation.

Photography

Photographs were taken using a 50mm equivalent focal length lens using a Canon EOS400D digital SLR camera. Photographs were taken in portrait format to reduce any possible lens distortion.

The camera was mounted on a stable, levelled tripod with a professional panoramic head attached. This positions the focal centre of the camera lens above the pivot of the tripod and allows the photographs to be stitched together accurately using software. The position of the viewpoint location was recorded using a handheld GPS receiver.

Individual photographs were spliced together using industry standard software to create a panorama. The final panoramas were then saved as high-resolution full-colour digital images.

Photomontage

Detailed correctly dimensioned 3D computer models of the proposed development were generated. These were placed onto the ground model to scale, and in the correct position.

For each photomontage viewpoint, the detailed model was rendered to a digital image using a lighting model in the computer software consistent with conditions within the photograph of that viewpoint. The rendered image used the same viewpoint, bearing and field of view parameters as the previously matched wireframes.

The photomontages were produced by overlaying the rendered image on the photograph, using known control points (minimum 3 per viewpoint) which were included within the photograph. Final adjustments were then made to brightness and contrast of the rendered image to match it to the photograph. Any rendered items

that should be obscured by foreground detail within the photograph were then digitally removed using Adobe Photoshop. The resulting photomontage was then saved as high-resolution full-colour digital image.

Interpretation

The correct viewing distance for the photomontages produced is the distance from eye to paper which will result in the apparent size of the development in the image matching the apparent size of actual objects which would be seen by an observer standing at the viewpoint. This is calculated according to the size of the final printed image and its field of view. The photomontages produced are cylindrical projection panoramas with a horizontal field of view of 90 degrees. They are printed 510mm wide so the correct view distance in all cases is therefore 31.5cm. As the panoramas are cylindrical projection the view distance is the same across the extent of the panorama. To correctly view the full panorama the image should therefore be curved around the eye.

Where photomontages have been produced, there is an inevitable element of judgement inherent in the representation of the changes shown in the finished image. The process relies upon the judgement of an experienced professional.

Because a photomontage is based upon an actual photograph, it represents the lighting conditions at the time that the photograph was taken. This obviously changes with weather, time of day and season. Therefore the perceptibility of the changes represented and the visual character of the development or restored site could vary from the image created. However, if carefully constructed, the photomontages can provide a very good guide of the position in the view and likely appearance.

Like a photograph, a photomontage is, at best, a representation of a view and, as such, cannot reproduce the actual experience of being at the location depicted.

APPENDIX 5

Visual Assessment

Appendix 5.1					
Potential visibility from the settlements within 5km of the site and the ZTV					
Settlement	Distance (km)	Direction	Sensitivity of visual receptors	Magnitude	Overall effect
	From turbine location				
Overton	1.75	NW	High – residential receptors	Negligible There are no views from residences within the village of the existing site, and intervening tree and hedgerow cover would screen all potential views of the proposed solar PV development.	Imperceptible
Penley	2.5	E	High – residential receptors	Negligible There are no views from residences within the village of the existing site, and intervening tree and hedgerow cover would screen all potential views of the proposed solar PV development.	Imperceptible
Distances are measured from the closest point of the settlement to the proposed site boundary.					

Appendix 5.2							
Potential visibility from the individual properties and groups of properties within 2km of the site and the ZTV							
Property	Distance (m)	Direction	Orientation of property	Sensitivity of visual receptors	Magnitude		Overall effect
	From turbine location						
Lightwood Green (Group)	275m (Greenfield House – closest property)	N	Varies	High – residential receptors	Negligible Views from all residences within the group would be screened by existing intervening vegetation cover.		Imperceptible
Plas yn Coed	1380	N	E, W, S	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.		Imperceptible
Cae-Dyah (2 properties)	2000	N	N, S, E, W	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.		Imperceptible
Properties on Cloy Lane (loose group x4)	1590 (closest)	NNE	Varies	High – residential receptors	Negligible Views from all residences within the group would be screened by existing intervening vegetation cover.		Imperceptible
Cross Mill	1980	NE	NNW-SSE	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.		Imperceptible
Blackwood	1530	NE	S, N	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.		Imperceptible
Shady Oaks, Oakleigh, Rosedale, Peartree & Glenmore (group)	625	NE	Varies	High – residential receptors	Negligible Views from all residences within the group would be screened by existing intervening vegetation cover.		Imperceptible
Higher Penley Farm	960	NE	NW, NE, SE, SW	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.		Imperceptible

Appendix 5.2						
Potential visibility from the individual properties and groups of properties within 2km of the site and the ZTV						
Property	Distance (m)	Direction	Orientation of property	Sensitivity of visual receptors	Magnitude	Overall effect
	From turbine location					
Group at northern end of Red Hall Lane including Shilling Bar Cottage & Gil Bar Cottage	985	NE	Varies	High – residential receptors	Negligible Views from all residences within the group would be screened by existing intervening vegetation cover.	Imperceptible
Red Hall	700	E	NW, SE, SW	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover. Viewpoint 8	Imperceptible
Plas Derwen & Tir Barwen (group)	520	E	NW, SE	High – residential receptors	Negligible Views from all residences within the group would be screened by existing intervening vegetation cover. Viewpoint 8	Imperceptible
The Croft	340	E	NW, SE, SW	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover. Viewpoint 5	Imperceptible
Properties on Lion Lane (Group)	1550	E	Varies	High – residential receptors	Negligible Views from all residences within the group would be screened by existing intervening woodland cover.	Imperceptible
Northwood House	1970	SSE	NE, SE, SW	High – residential receptors	Negligible Views would be screened by existing intervening woodland cover.	Imperceptible
Park Hall	1530	SE	E, S, W	High – residential receptors	Negligible Views would be screened by existing intervening woodland cover.	Imperceptible
Nantclimbers Farm	670	SE	NW, NE, SE	High – residential receptors	Negligible Views would be screened by existing intervening farm buildings and vegetation cover.	Imperceptible
The Poplars	230	SE	N, E, S, W	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.	Imperceptible

Appendix 5.2						
Potential visibility from the individual properties and groups of properties within 2km of the site and the ZTV						
Property	Distance (m)	Direction	Orientation of property	Sensitivity of visual receptors	Magnitude	Overall effect
	From turbine location					
Goblindale Farm	1060	S	NW, NE, SE, SW	High – residential receptors	Negligible Views would be screened by existing intervening woodland cover.	Imperceptible
Trench Farm	230	S	NNE, ESE, SSW, WNW	High – residential receptors	Negligible Views would be screened by existing intervening farm buildings and vegetation cover. Viewpoint 4	Imperceptible
Trench Farm Cottages	280	S	NNE, ESE, SSW, WNW	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.	Imperceptible
Cross Lanes Cottages (group x2)	765	S	NW, NE, SE, SW	High – residential receptors	Negligible Views would be screened by existing intervening woodland cover.	Imperceptible
Parkley Farm, Sunny Mede (Group on A 528 Grange road)	640	S	Varies	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover.	Imperceptible
Knolton (group)	525 (at closest property Maes Lewis)	SW	Varies	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover. Viewpoint 2	Imperceptible
Knolton Bryn, group to west of A528 including Rhewl, and Old Post Office Farm	645	W	Varies	High – residential receptors	Negligible Views would be screened by existing intervening vegetation cover. Viewpoint 1	Imperceptible
Queensbridge	1000	NW	Varies	High – residential receptors	Negligible Views would be screened by existing intervening woodland cover.	Imperceptible
Musley	1165	NNW	E, S, W	High – residential receptors	Negligible Views would be screened by existing intervening woodland cover.	Imperceptible
Distances are measured from the closest point of the property/ group of properties to the proposed site boundary.						

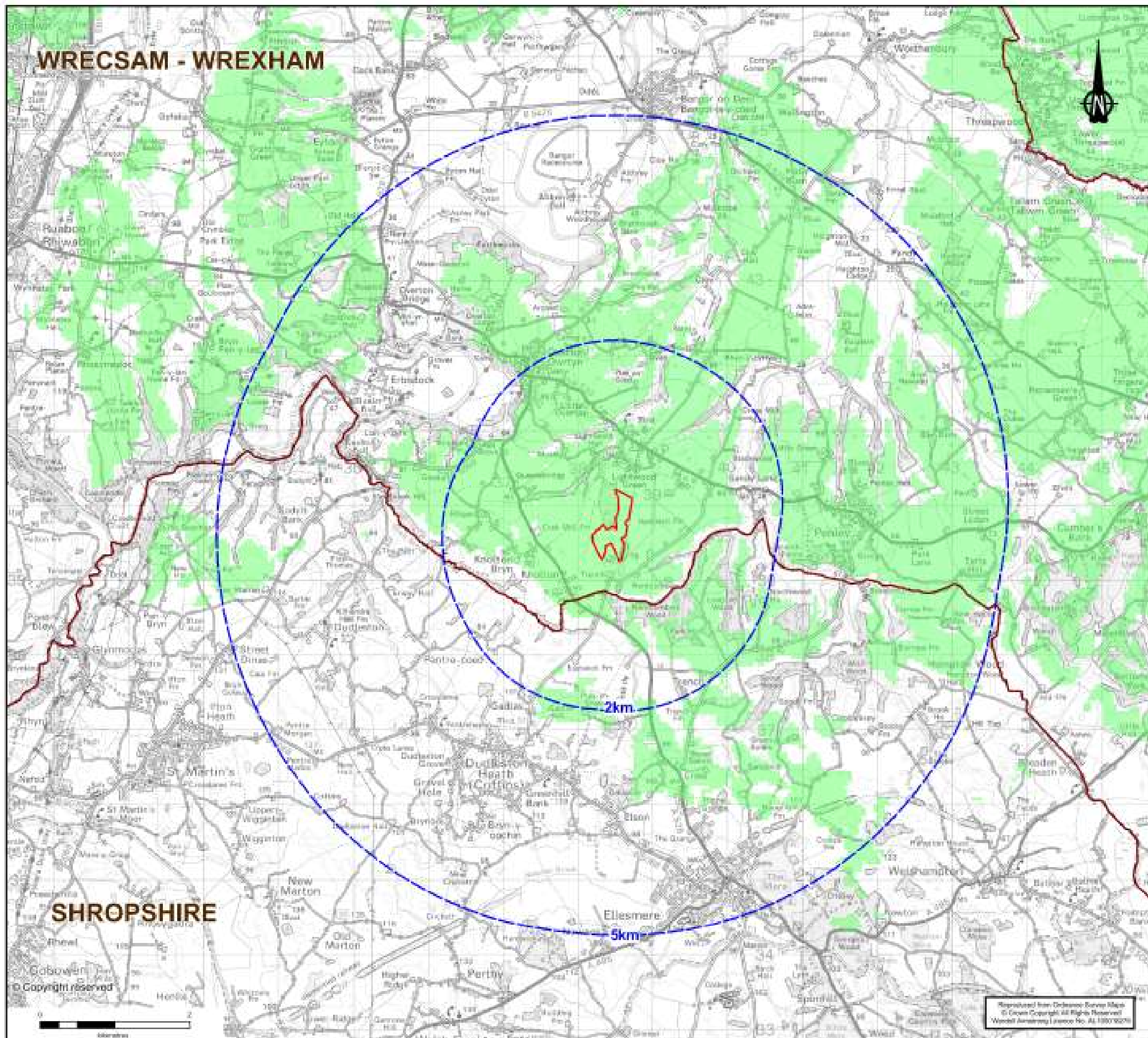
Appendix 5.3				
Potential visibility from the main roads and recreational receptors within 5km of the site and the ZTV				
Roads, paths etc	Potential visibility of the Development	Sensitivity of visual receptors	Magnitude	Overall effect
A-roads within 5km of the site at the closest point and the ZTV				
A528 (Grange Road / Salop Road)	The A528 runs north-south through the study area passing 555m to the west of the site. It is within the ZTV from Overton in the north to the crossroads south of Trench to the south. Outwith this stretch, topographical undulations mean it passes in and out of the ZTV. However, the dense pattern of hedgerows, trees and woodlands within the study area ensure that there are no views of the existing site from this road. Viewpoints 1, 2	Medium (road users)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
A539 (station Road)	The A539 runs approximately east-west through the study area and passes the site to the north, approximately 665m at its closest point. It is within the ZTV for most of its length within the study area, with the exception of lower lying incised fluvial valleys of the River Dee (to the west) and at Sandy Lane to the west of Penley. However, the dense pattern of hedgerows, trees and woodlands within the study area ensure that there are no views of the existing site from this road.	Medium (road users)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
A525	The A525 cuts through the north-eastern edge of the 5km study area to the east of Bangor on Dee and is in and out of the ZTV as topography rises and dips across the incised fluvial valleys. However, the distance (4.5km minimum) from the site and the dense pattern of hedgerows, trees and woodlands within the study area ensure that there are no views of the existing site from this road.	Medium (road users)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible

Appendix 5.3				
Potential visibility from the main roads and recreational receptors within 5km of the site and the ZTV				
Roads, paths etc	Potential visibility of the Development	Sensitivity of visual receptors	Magnitude	Overall effect
B-roads within 5km of the site at the closest point and the ZTV				
B5069	The 5069 runs northeast from St Martins towards Overton and is within the ZTV for its final 1.6km long section until it joins the A528 approximately 600m from the southern edge of the village. However all views from this road towards the existing site are screened by intervening hedgerows and tree cover.	Medium (road users)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
Other public roads of note within 2km of the site at the closest point and the ZTV				
Red Hall Lane	Red Hall Lane is a single track road with passing places forming a link between the A539 and A528. It is just over 200m away from the site at its closest point to the south-southeast. Though this road is entirely within the ZTV, all views from it towards the existing site are screened by intervening hedgerows and tree cover. Viewpoints 5, 8	Medium (road users)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
Cycle Routes and Public Rights of Way within the 5km study area and the ZTV				
Regional Route 31, Wem and Ellesmere Cycle Routes	A 600m long section of this route is within the ZTV to the north-east of Ellesmere and approximately 3.6km from the site at its closest point. Distance and the dense pattern of hedgerows, trees and woodlands within the intervening land ensure that there are no views of the existing site from.	Medium	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible

Appendix 5.3 Potential visibility from the main roads and recreational receptors within 5km of the site and the ZTV				
Roads, paths etc	Potential visibility of the Development	Sensitivity of visual receptors	Magnitude	Overall effect
Footpath 14, Overton Parish.	This public right of way runs south from the A528 Salop Road to Trench Farm. It runs along the farm track adjoining the western side of the site boundary and is within the ZTV for most of its length (only being outside the ZTV where it crosses 2 watercourses to the north-east of the site. There are 3 short sections (each approx. 10m long) where glimpses in to the site can be achieved, these are at the existing field access in to the site and two additional points on the western site boundary where there are short gaps in the hedge. All other views from the footpath are screened by existing intervening hedgerows, trees and woodland. Viewpoint 3	Medium	In general, Negligible, due to existing vegetation screening, however, for the 3 short sections identified opposite, magnitude would be medium due to proximity of views.	In general, Imperceptible with 3 (c10m long) sections with Moderate, adverse effects.
Footpath 33, Overton Parish.	This public right of way runs southwards from Lightwood Green through farmland past the very south-eastern tip of the site to Trench Farm. Existing mature hedgerows and trees along the eastern side of the site provide an effective visual screen along all but the 40m long section adjoining the south-eastern tip of the site. From here there are views broken up by existing trees and scrub of the field at the south-eastern corner of the site. Viewpoints 4, 6, 7	Medium	In general, Negligible, due to existing vegetation screening, however, for the short section identified opposite, magnitude would be medium due to proximity of views.	In general, Imperceptible with a single 40m long section with Moderate, adverse effects.
All other footpaths within the 5km study area and the ZTV	The existing dense pattern of hedgerows, trees and woodlands within the study area ensures that there are no views of the existing site from any of the public footpaths with the exception of the two listed above. Viewpoints 1, 8	Medium	Negligible, Due to existing vegetation screening.	Imperceptible

Appendix 5.3				
Potential visibility from the main roads and recreational receptors within 5km of the site and the ZTV				
Roads, paths etc	Potential visibility of the Development	Sensitivity of visual receptors	Magnitude	Overall effect
Recreational Receptors within 5km of the site at the closest point and the ZTV				
Rosedale Park Caravan Park	This caravan park is located approximately 695m to the north east of the site boundary off the southern side of the A539. The existing pattern of mature trees and hedgerows between it and the site ensure that there are no views of the existing site.	High (visitors to the caravan park)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
Playing fields Penley	Large expanse of playing fields / public open space on the southern edge of Penley approximately 2.5km to the east of the site at its closest point. All views to the west towards the site are screened by intervening vegetation cover.	Medium (users of the sports fields)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
Trench Farm Caravan site / fishery	At its closest point, the fishery is approximately 12m from the south-easternmost extent of the proposed solar PV site. The land within the site boundary is screened from view by existing intervening vegetation. This includes a dense evergreen leyland cypress (<i>X cupressocyparis leylandii</i>) hedge around the fishing ponds and mature dense farm hedgerow on northern edge of the caravan park. Viewpoint 4	High (visitors to the caravan park and fishery)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
Birch Hill Farm Caravan Club Certified location	This small "Certified Location" caravan site is located 3km SSE of the site and approximately 1.7km north of Ellesmere at its closest point. All views to the north towards the site are screened by intervening vegetation cover.	High (visitors to the caravan site)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible
The Trotting Mare Inn / Caravan Park at Knolton	The Trotting Mare is on the western side of the A528 at Knolton, approximately 625m to the SW of the site at its closest point. All views to the north-east towards the site are screened by intervening vegetation cover. Viewpoint 2	High (visitors to the caravan park)	Negligible, All views would be screened by existing intervening vegetation.	Imperceptible

DRAWINGS



Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries
- Area where solar farm is theoretically visible

Notes:

The ZTV is based on a multi point grid within the proposed solar panels areas.

Each point is 2.3m above ground level.

ZTV is based on theoretical visibility using bare ground topography without any screening.

OS Terrain 50 DTM data was used to create the model from which the ZTV was produced.

The ZTV takes into account an eye height of 2m.

The ZTV was created using MapInfo Software which takes into account the curvature of the Earth.

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Trench Farm Solar Farm

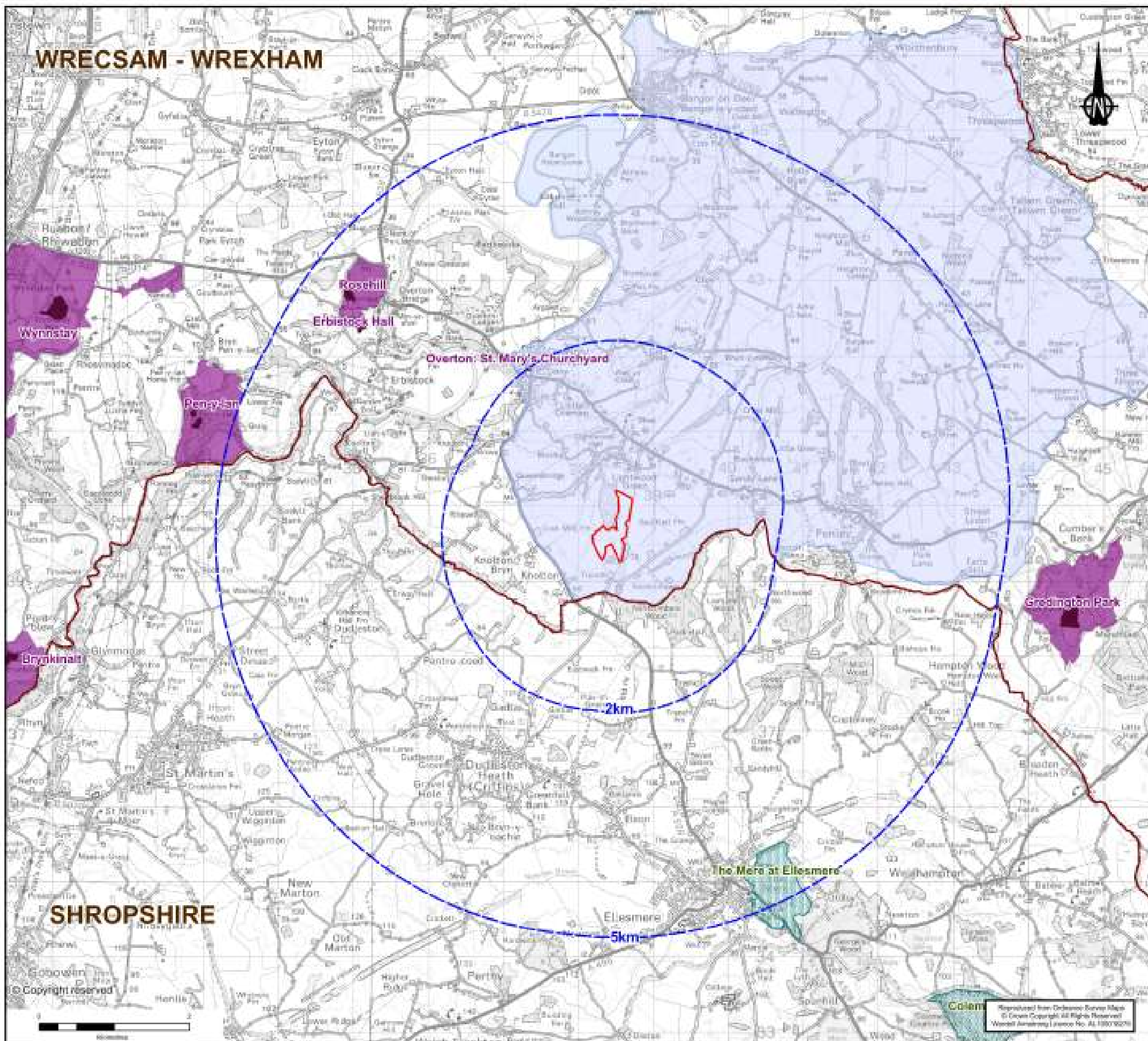
Figure 1
Zone of Theoretical Visibility

PROJECT PE10328/001	SCALE 1:50 000 @ A3	DATE June 2014
DRAWN BY JSE	CHECKED BY SB	APPROVED BY CR
☐ STONE-UNTRUST HEAD OFFICE TEL: 0191 111 1111	☐ CARDIFF TEL: 0191 111 1111	☐ LONDON TEL: 0191 111 1111
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WRECSAM - WREXHAM



Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries
- Country Parks
- Register of Parks and Gardens
- Gardens & Kitchen Gardens
- Area of Historical Landscape - Maelfor Saesneg

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WORKS	DESIGNS	DATTS	DESIGN	DESIGN	DESIGN
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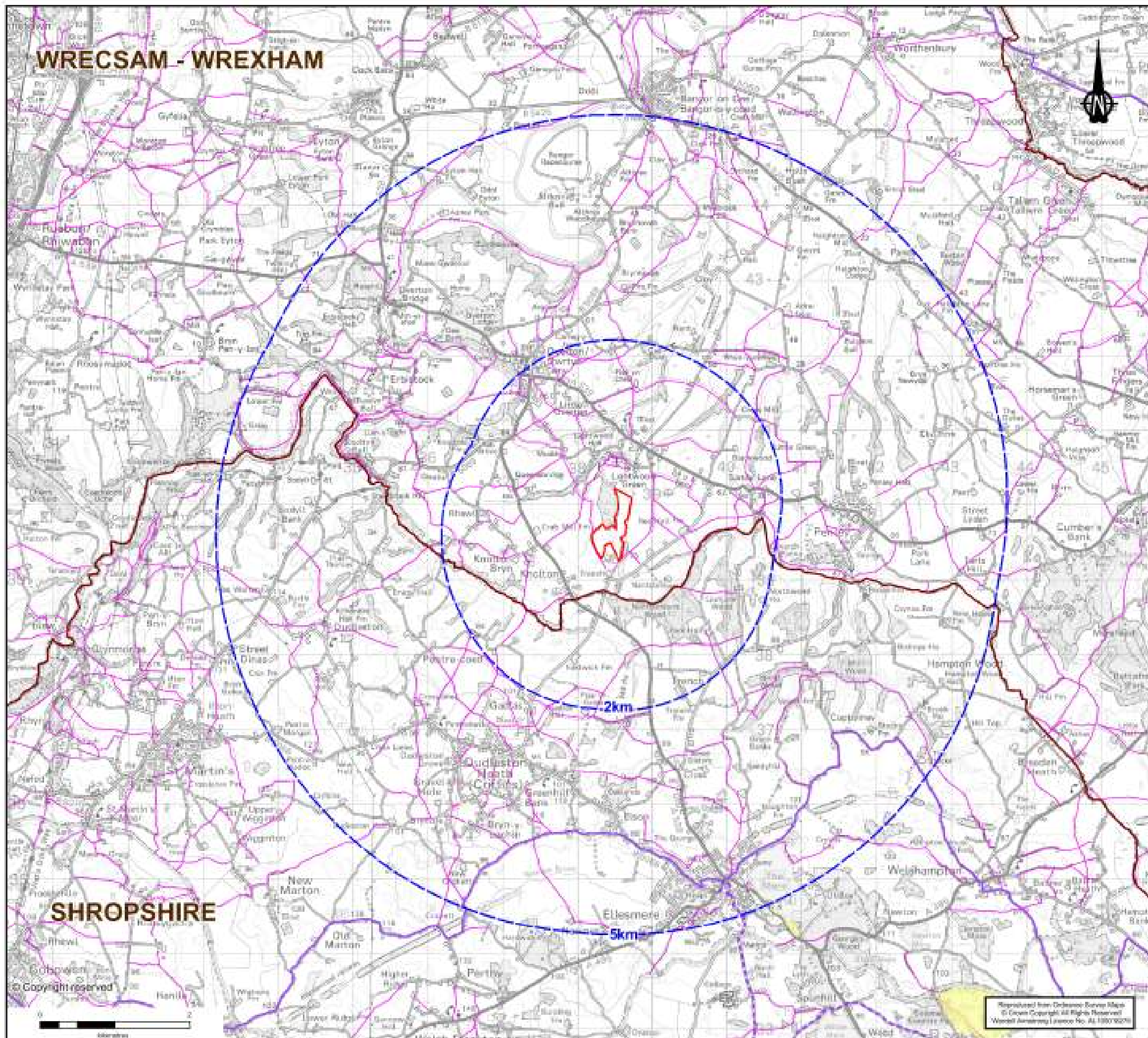
Trench Farm Solar Farm

Figure 2
Landscape Designations and
Sensitive Receptors

PE10328/002	1:50 000 @ A3	June 2014
JSE	SB	CR
☐ STONE UNTRAIT HEAD OFFICE ☐ NEWCASTLE UPON TYNE ☐ WEST BROMWICH ☐ LONDON	TEL: 0191 111 1111 TEL: 0191 232 2883 TEL: 0121 580 2669 TEL: 020 7357 2672	☐ CARDIFF ☐ LIVERPOOL ☐ SHEFFIELD ☐ EDINBURGH ☐ LONDON TEL: 020 575 9181 TEL: 0151 245 6201 TEL: 0114 245 6204 TEL: 0131 555 5551 TEL: 020 7451 451 99



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Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries
- Regional Cycle Network
 - Traffic Free
 - On Road
- Local Cycle Network Routes
 - Traffic Free
 - On Road
- Public rights of way (PRoW)
- CRow Open Country & Registered Common Land

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PROJECT	Trench Farm Solar Farm				
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FIGURE TITLE	Figure 3 Access Network				
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REFNO	PE10328/003	SCALE	1:50 000 @ A3	DATE	June 2014
DESIGN BY	JSE	CHECKED BY	SB	APPROVED BY	CR

☐ STONE MOUNTAIN HEAD OFFICE	TEL: 01845 111 7777	☐ CARDIFF	TEL: 01495 575 9191
☒ NEWCASTLE UPON TYNE	TEL: 0191 232 0953	☐ LONDON	TEL: 01845 245 0707
☐ WEST BROMWICH	TEL: 0121 590 0669	☐ SHEFFIELD	TEL: 0114 245 0294
☐ LONDON	TEL: 020 7357 2973	☐ EDINBURGH	TEL: 0131 555 5551
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WRECSAM - WREXHAM

SHROPSHIRE

Key

Site boundary

2 and 5km distance buffers

Local authority boundaries

Landmap Geological Landscape - Classification Level 1

Lowland hills and valleys, Outstanding

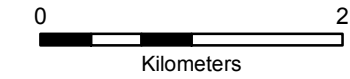
Lowland hills and valleys, High

Lowland hills and valleys, Moderate

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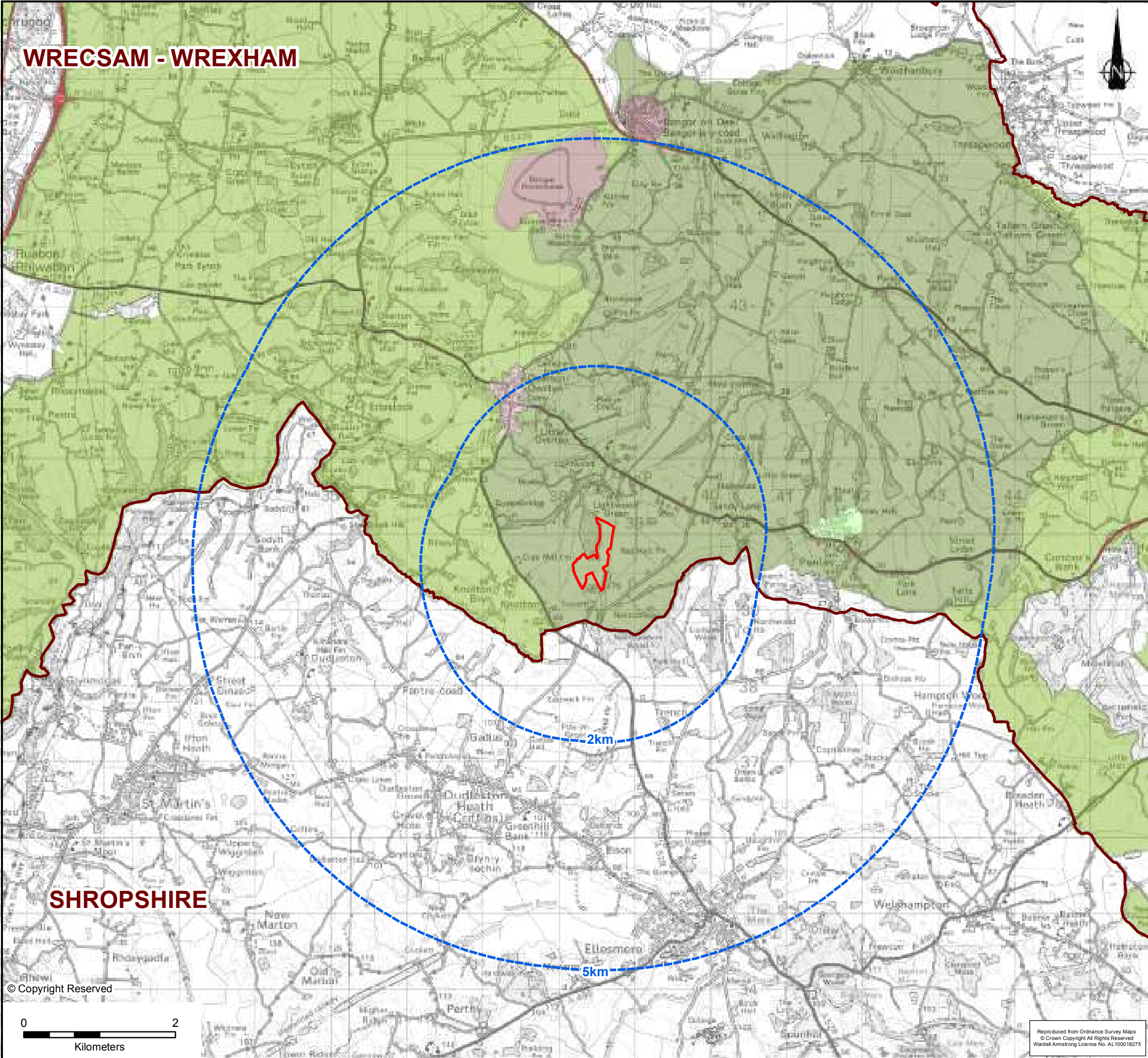
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REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D	
CLIENT						
 LIGHTSOURCE SOLAR POWER FOR A BETTER WORLD						
PROJECT						
Trench Farm Solar Farm						
DRAWING TITLE						
Figure 4B Landmap Geological Landscape						
DRG No PE10328/004B		SCALE 1:50,000 @ A3		DATE June 2014		
DRAWN BY JSE		CHECKED BY SB		APPROVED BY CR		
☐ STONE-DONTRAM HEAD OFFICE ☒ NEWCASTLE UPON TYNE ☐ WEST BROMWICH ☐ LONDON		TEL: 0191 111 1111 TEL: 0191 231 0000 TEL: 0121 550 0000 TEL: 020 7897 2012		☐ CARDIFF ☐ LEIGH ☐ MANCHESTER ☐ BIRMINGHAM ☐ LIVERPOOL		TEL: 01492 551 001 TEL: 0161 275 0000 TEL: 0121 550 0000 TEL: 0121 550 0000 TEL: 0151 496 0000



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Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries

Landmap Cultural Landscape - Classification Level 4

- Agricultural,,Outstanding
- Agricultural,,High
- Communications & Transport,,High
- Other People (specify),,Moderate
- Rural Settlement,,Outstanding
- Urban Settlement,,Outstanding

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CLIENT																					
 LIGHTSOURCE SOLAR POWER. BETTER. FASTER. GREENER.																					
PROJECT																					
Trench Farm Solar Farm																					
DRAWING TITLE																					
Figure 4C Landmap Cultural Landscape																					
DRG No	SCALE		DATE																		
PE10328/004C	1:50,000 @ A3		June 2014																		
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JSE	SB		CR																		
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WRECSAM - WREXHAM

SHROPSHIRE

Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries

Landmap Historic Landscape - Classification Level 2

- Agricultural, Outstanding
- Agricultural, High
- Agricultural, Moderate

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PROJECT

Trench Farm Solar Farm

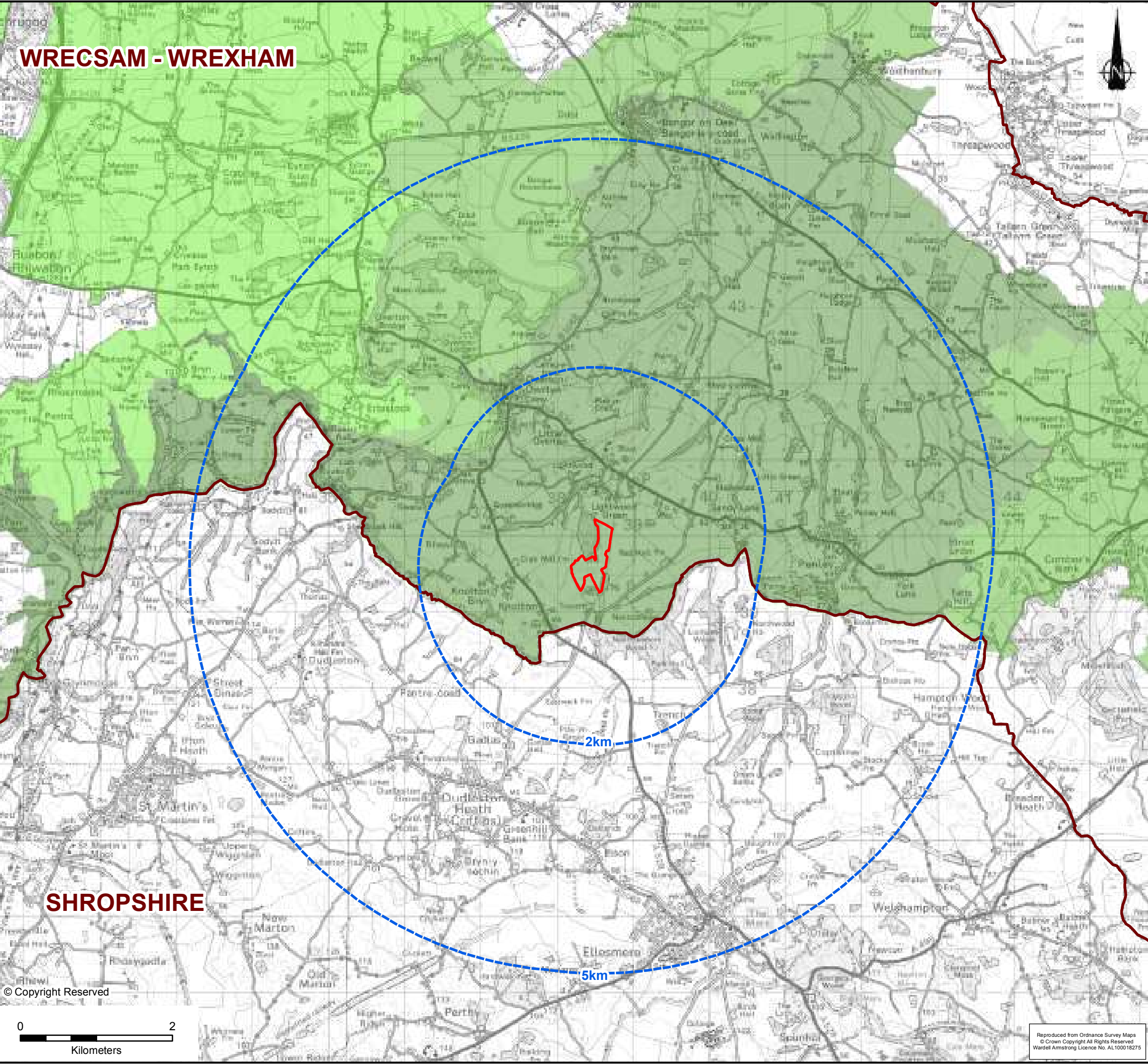
DRAWING TITLE

Figure 4D
Landmap
Historic Landscape

DRG No	SCALE	DATE
PE10328/004D	1:50,000 @ A3	June 2014
DRAWN BY	CHECKED BY	APPROVED BY
JSE	SB	CR

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WRECSAM - WREXHAM

SHROPSHIRE

Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries

Landmap Landscape Habitats - Classification Level 3

- Improved Grassland.High
- Mosaic.High
- Mosaic.Moderate

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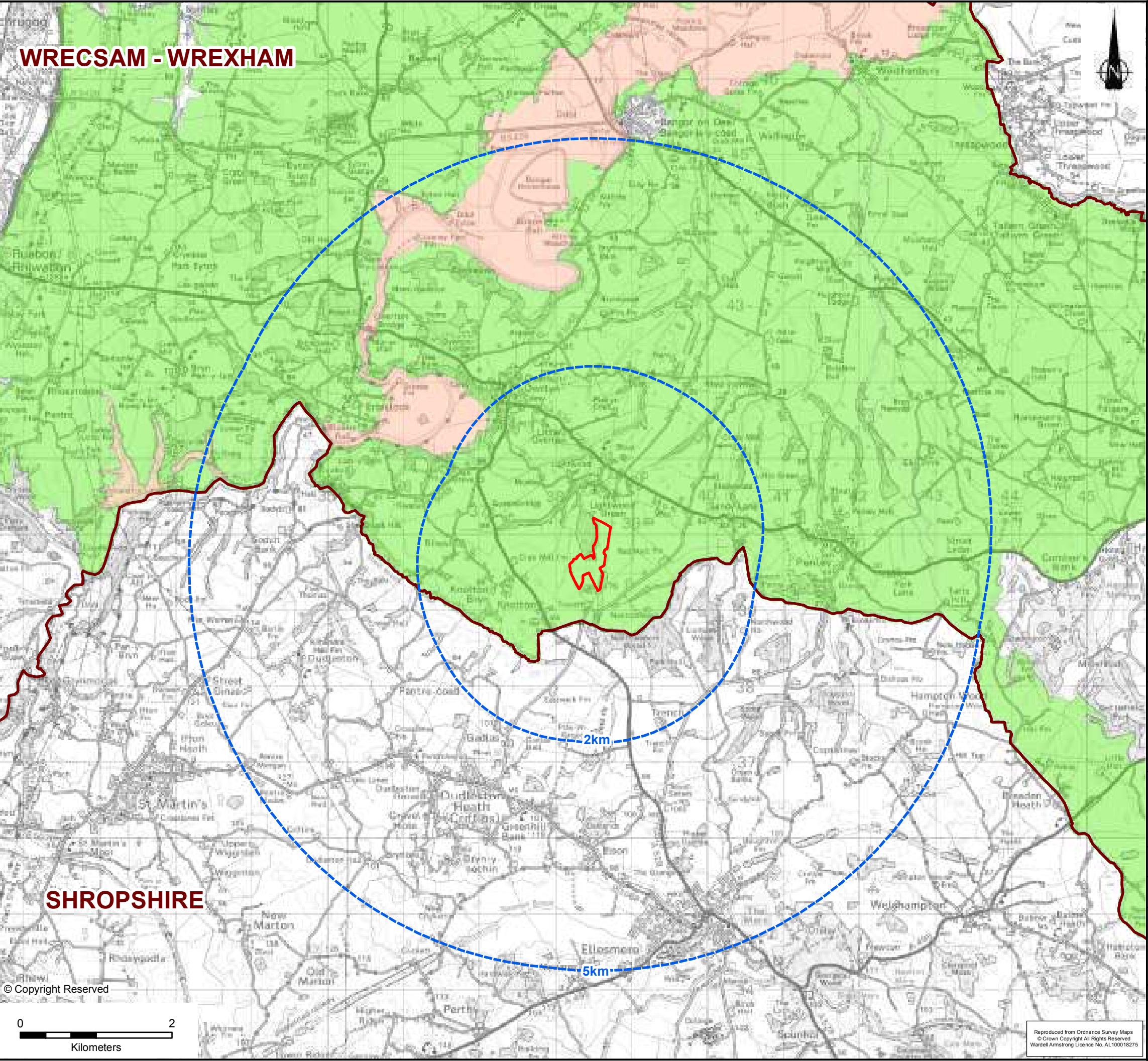
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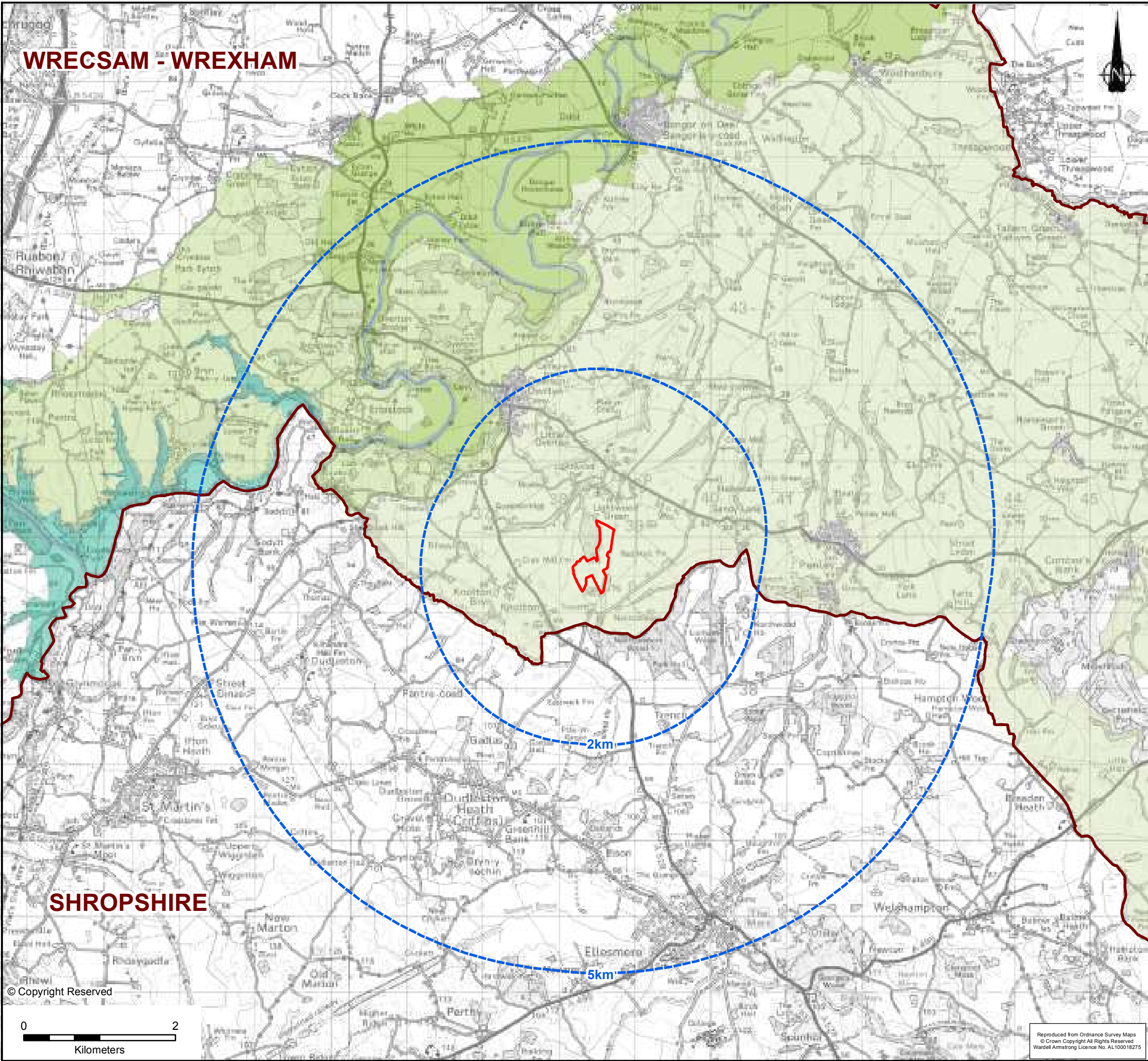
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CLIENT																					
 LIGHTSOURCE SOLAR POWER																					
PROJECT																					
Trench Farm Solar Farm																					
DRAWING TITLE																					
Figure 4E Landmap Landscape Habitats																					
DRG No PE10328/004E		SCALE 1:50,000 @ A3		DATE June 2014																	
DRAWN BY JSE		CHECKED BY SB		APPROVED BY CR																	
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Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries

Landmap Visual and Sensory Landscape - Classification Level 2

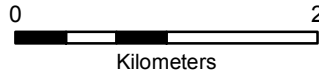
- Built Land.Moderate
- Flat Lowland/Levels.High
- Inland Water (Including Associated Edge).High
- Lowland Valleys.High
- Rolling Lowland.High
- Rolling Lowland.Moderate

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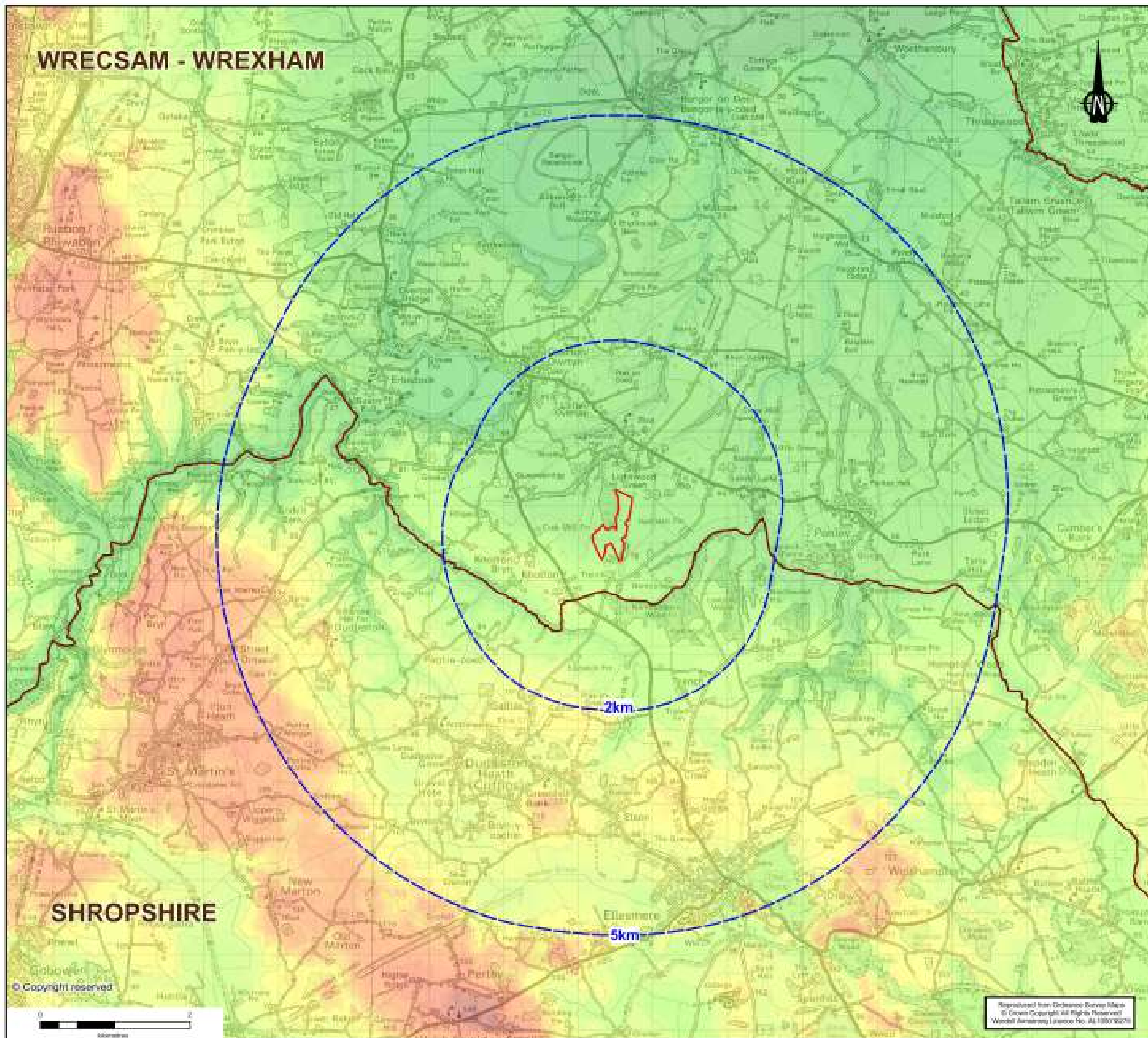
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CLIENT																					
 LIGHTSOURCE																					
PROJECT																					
Trench Farm Solar Farm																					
DRAWING TITLE																					
Figure 4F Landmap Visual and Sensory Landscape																					
DRG No PE10328/004F		SCALE 1:50,000 @ A3		DATE June 2014																	
DRAWN BY JSE		CHECKED BY SB		APPROVED BY CR																	
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☒ NEWCASTLE UPON TYNE	TEL: 0191 232 0000	☐ LIVERPOOL	TEL: 0151 242 0000																		
☐ WEST BROMWICH	TEL: 0121 555 0000	☐ BIRMINGHAM	TEL: 0121 555 0001																		
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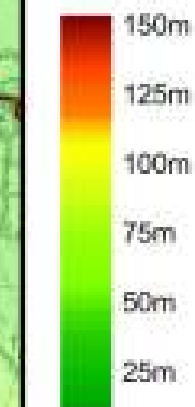
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Key

- Site boundary
- 2 and 5km distance buffers
- Local authority boundaries

mAOD



Notes:

DTM data derived from OS terrain 50 ASCII tiles

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PROJECT	Trench Farm Solar Farm				
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FIGURE TITLE	Figure 5 Topography				
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REF NO	PE10328/005	SCALE	1:50 000 @ A3	DATE	June 2014
DRAWN BY	JSE	CHECKED BY	SB	APPROVED BY	CR

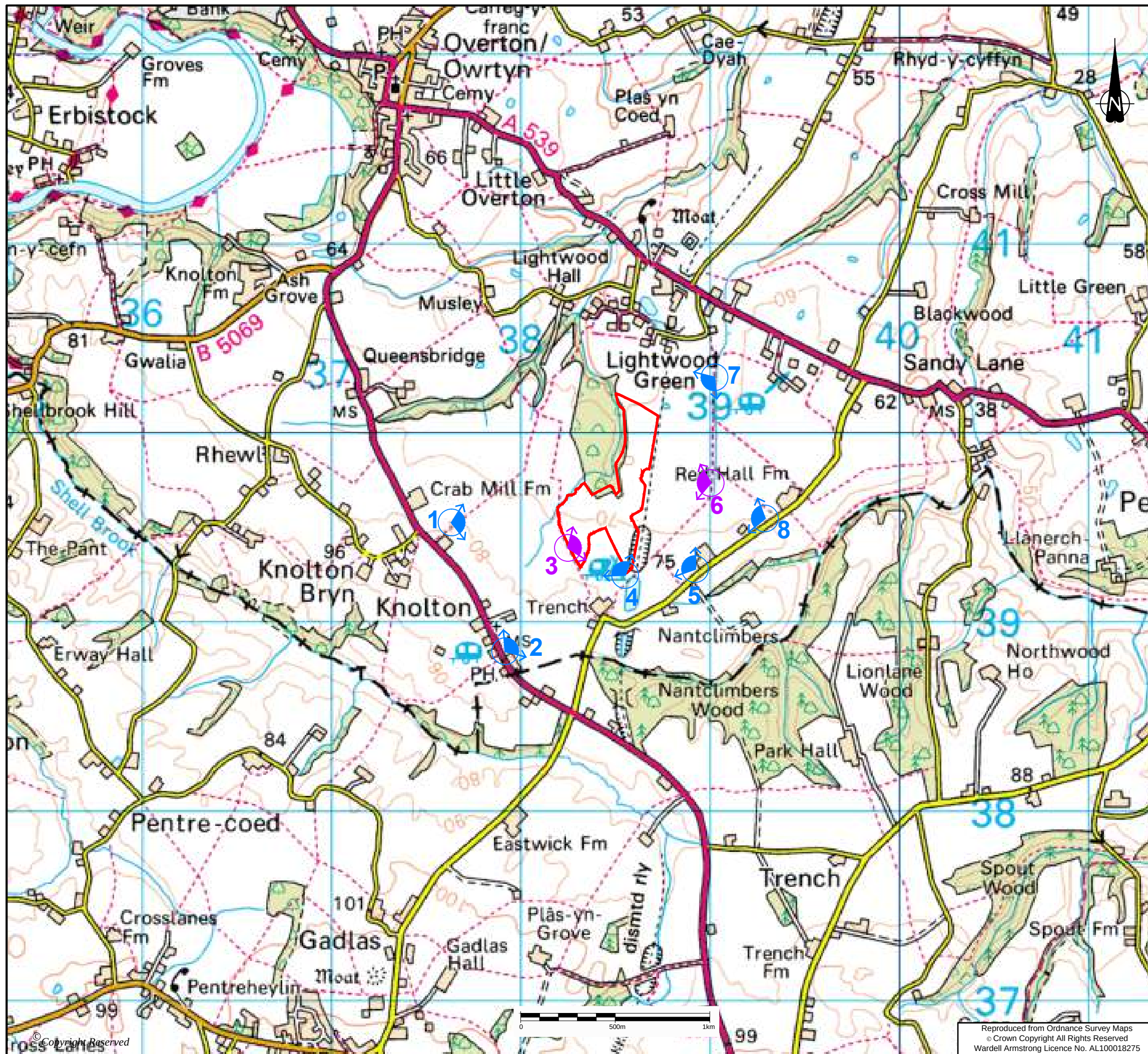
☐ STONE-ON-THE-ROOF	TEL: 0191 111 1111	☐ CARDIFF	TEL: 0191 555 5555
☐ NEWCASTLE UPON TYNE	TEL: 0191 222 2222	☐ LONDON	TEL: 0191 333 3333
☐ WEST BROMWICH	TEL: 0191 444 4444	☐ SHEFFIELD	TEL: 0191 555 5555
☐ LIVERPOOL	TEL: 0191 666 6666	☐ EDINBURGH	TEL: 0191 777 7777
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DO NOT SCALE FROM THIS DRAWING

A3

KEY

Site boundary

Photographic Viewpoint Location

Photographic viewpoint and Photomontage Location

REVISION	DETAILS			DATE	DRAWN
CLIENT	LIGHTSOURCE				
PROJECT	Trench Farm Solar				
DRAWING TITLE					
Figure 6 Viewpoint Location Plan					
DRG No.	PE10328-007	SCALE	1:20000	DATE	18/06/14
DRAWN BY	SMB	CHECKED BY	LG	APPROVED BY	HK
☐ STOKE-ON-TRENT (HEAD OFFICE)	TEL 0845 111 7777	☐ CARDIFF	TEL 029 2072 9191		
☐ NEWCASTLE UPON TYNE	TEL 0191 232 0943	☐ LEIGH	TEL 01942 260101		
☐ WEST BROMWICH	TEL 0121 580 0909	☐ SHEFFIELD	TEL 0114 245 6244		
☐ LONDON	TEL 020 7287 2872	☒ EDINBURGH	TEL 0131 555 3311		
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LANDSCAPE AND VISUAL ASSESSMENT			VIEWPOINT 1		PHOTOGRAPH TAKEN JUNE 2014						
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Public right of way #15 to north east side of Old Post Office Farm / Knolton Nursery Approximate grid ref: 337631, 339523	560m	View across flat and gently shelving land with views across foreground pasture limited by extensive hedgerow, mature tree and woodland cover.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	- Retain existing tree and hedgerow screen around the perimeter of the site.	None	Imperceptible				
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Footpath users. High: residents at Old Post Office Farm							

Location of Viewpoint 1 @ 1:25,000





LANDSCAPE AND VISUAL ASSESSMENT				VIEWPOINT 2		PHOTOGRAPH TAKEN JUNE 2014					
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
A528 Grange Road, Knolton. Approximate grid ref: 337914, 338843	590m	View through gap in roadside hedgerow across flat and gently shelving land with views across foreground pasture limited by extensive hedgerow, mature tree and woodland cover.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	- Retain existing tree and hedgerow screen around the perimeter of the site.	None	Imperceptible	Slight	Moderate	Substantial	Severe
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Road users. High: residents at Knolton							

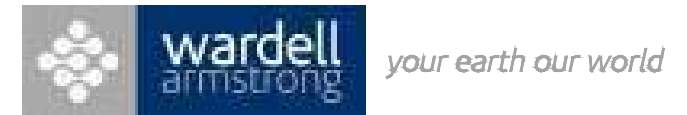
Location of Viewpoint 2 @ 1:25,000





LANDSCAPE AND VISUAL ASSESSMENT			VIEWPOINT 3			PHOTOGRAPH TAKEN JUNE 2014					
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Public right of way #14 along the western boundary of the site. Approximate grid ref: 338266, 339356	2.5m	View through gap in boundary hedgerow into the south-western corner of the site. Views are constrained by mature field boundary hedgerows with mature specimen trees.	Construction of the solar farm would be noticeable at close quarters through the gap in the hedgerow. Solar panels would be backclothed by existing boundary hedge and trees.	Development would be noticeable at close quarters through the gap in the hedgerow. Solar panels would be backclothed by existing boundary hedge and trees.	- Retain existing trees and hedgerows around the perimeter of the site. - New planting to gap up existing hedgerow would provide foreground screening.	Temporary reversible consctuction effects. Long term reversible effects.	Imperceptible				
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
High due to proximity.				Medium: footpath users.							

Location of Viewpoint 3 @ 1:25,000





LANDSCAPE AND VISUAL ASSESSMENT			VIEWPOINT 4			PHOTOGRAPH TAKEN JUNE 2014					
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Public footpath #33 on the northern side of the Trench Farm caravan park. Approximate grid ref: 338549, 339245	10m	View across flat and gently shelving land with views across foreground pasture limited by extensive hedgerow, mature tree and woodland cover. Distant view of skyline hills.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	- Retain existing tree and hedgerow screen around the perimeter of the site.	None	Imperceptible				
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Footpath users.							

Location of Viewpoint 4 @ 1:25,000





LANDSCAPE AND VISUAL ASSESSMENT			VIEWPOINT 5			PHOTOGRAPH TAKEN JUNE 2014					
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Red Hall Lane at gap in roadside hedge to the south-west side of The Croft. Approximate grid ref: 338919, 339276	325m	View across flat land which gently shelves beyond the foreground field. Views across foreground pasture are limited by extensive hedgerow, mature tree and woodland cover.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	None required.	None	Imperceptible				
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
Beneficial/Positive Impact											
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Road users. high: Residents at Croft.							

Location of Viewpoint 5 @ 1:25,000





LANDSCAPE AND VISUAL ASSESSMENT			VIEWPOINT 6		PHOTOGRAPH TAKEN JUNE 2014						
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Public right of way #33 to the east of the site. Approximate grid ref: 339001, 339732	330m	View across flat, very gently rising land. Views across foreground pasture are limited by extensive hedgerow, mature tree and woodland cover. Overhead electricity lines within the site can just be discerned in the left hand side of the view.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	None required.	None	Imperceptible				
	APPROX. HEIGHT AOD						During Construction (Short Term)				
							Adverse/Negative Impact				
	73m AOD										
							Beneficial/Positive Impact				
							Completed Development (Long Term)				
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Footpath users.							

Location of Viewpoint 6 @ 1:25,000

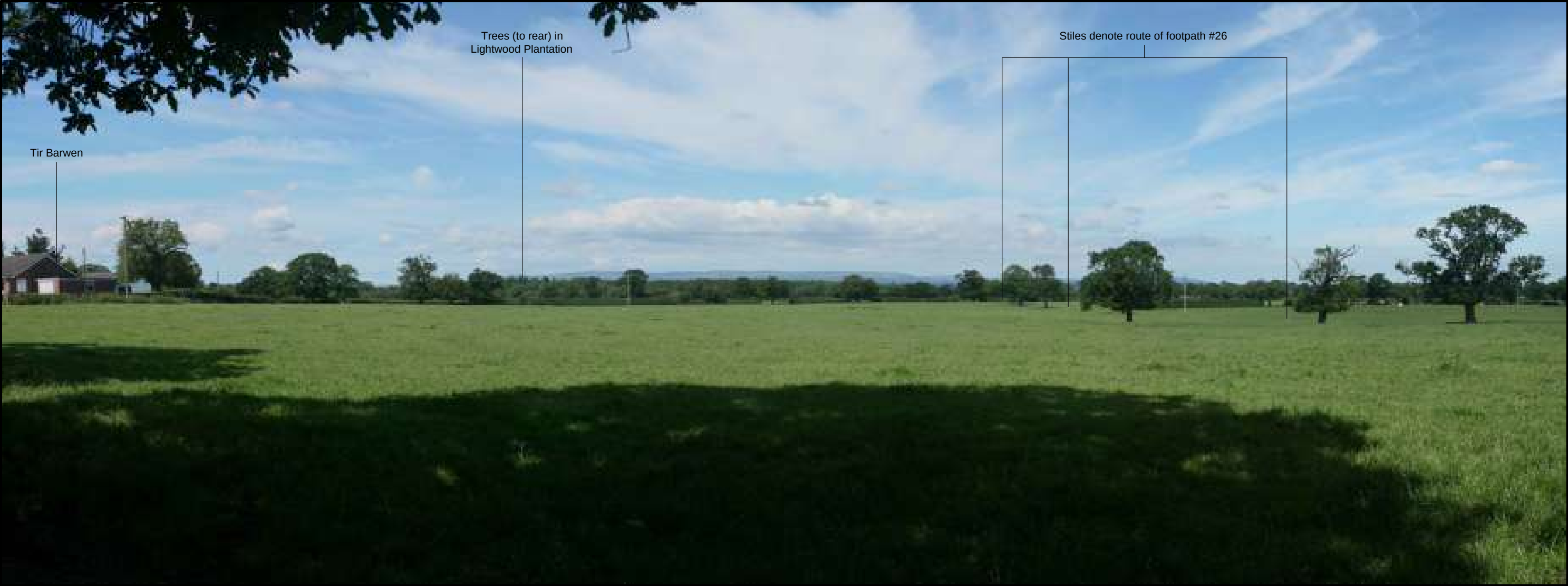




LANDSCAPE AND VISUAL ASSESSMENT			VIEWPOINT 7			PHOTOGRAPH TAKEN JUNE 2014					
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Public right of way #33 to the north-east of the site. Approximate grid ref: 339021, 340290	356m	View across flat, very gently rising land. Views across foreground pasture are limited by extensive hedgerow, mature tree and woodland cover.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	None required.	None	Imperceptible				
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
Beneficial/Positive Impact											
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Footpath users.							

Location of Viewpoint 7 @ 1:25,000





LANDSCAPE AND VISUAL ASSESSMENT				VIEWPOINT 8		PHOTOGRAPH TAKEN JUNE 2014					
VIEWPOINT LOCATION (RECEPTOR)	DISTANCE FROM SITE BOUNDARY	DESCRIPTION OF VIEW	VIEW DURING CONSTRUCTION	VIEW OF COMPLETED DEVELOPMENT	MITIGATION MEASURES	STATUS OF EFFECTS	VISUAL IMPACT ASSESSMENT				
Red Hall Lane at entrance to footpath #26. Approximate grid ref: 339288, 339544	650m	View across flat, gently shelving land. Views across foreground pasture to distant hills are disrupted and restricted by extensive hedgerow, mature tree and woodland cover.	Construction of the solar farm would be screened from view by intervening vegetation.	Development would be screened from view by intervening vegetation.	None required.	None	Imperceptible				
	During Construction (Short Term)										
	Adverse/Negative Impact										
	Beneficial/Positive Impact										
	Completed Development (Long Term)										
	Adverse/Negative Impact										
Beneficial/Positive Impact											
MAGNITUDE OF EFFECTS				SENSITIVITY OF VISUAL RECEPTORS							
Nil due to existing screening.				Medium: Road and Footpath users. High: adjacent residents.							

Location of Viewpoint 8 @ 1:25,000



Existing



Proposed



Photomontage Parameters

Grid Ref	338266mE 339356mN	Horizontal Scale	6.1 mm per °
Elevation	82mAOD	Horizontal Field of View	90°
Viewing Direction	80°	Vertical Field of View	28°
Distance to Development	0km	Viewing Distance	350mm @ A2
Camera Details	Nikon D3100 With Sigma Fixed 30mm Lens	Weather and Lighting Conditions:	Bright, partial cloud cover
Camera Height	1.7m		
Time and Date of Image Capture	16:10 12/06/2014		

Viewpoint Description

View east from PRoW to west of site.

For viewpoint location plan please see WA drawing number: PE10328/Figure 6
Photograph used is a composite panoramic image
Please refer to main document appendix for methodology statement

Viewpoint	VP3	Dwg No	PE10328/Fig 15	Date	June 2014
Drawn By	SKM	Checked By	RJB	Approved By	HK
☐ STOKE-ON-TRENT (HEAD OFFICE) TEL 0178 227 6700 ☐ CARDIFF TEL 029 2072 9191					
☒ NEWCASTLE UPON TYNE TEL 0191 232 0943					
 wardell armstrong <i>your earth our world</i>					

CLIENT	
PROJECT	Trench Farm Solar Photovoltaic Scheme
DRAWING TITLE	Figure 15 Photomontage Viewpoint 3

Existing



Proposed



Photomontage Parameters

Grid Ref	339001mE 339732mN	Horizontal Scale	6.1 mm per °
Elevation	73mAOD	Horizontal Field of View	90°
Viewing Direction	265°	Vertical Field of View	28°
Distance to Development	0.4km	Viewing Distance	350mm @ A2
Camera Details	Nikon D3100 With Sigma Fixed 30mm Lens	Weather and Lighting Conditions:	Bright, partial cloud cover
Camera Height	1.7m		
Time and Date of Image Capture	09:45 13/06/2014		

Viewpoint Description

View west from PRow to west of site off track to Red Hall Farm.

NOTE: The proposed development is entirely screened by intervening vegetation. Location and extent of development behind screening vegetation is indicated by translucent overlay.

For viewpoint location plan please see WA drawing number: PE10328/Figure 6

Photograph used is a composite panoramic image

Please refer to main document appendix for methodology statement

Viewpoint	VP6	Drg No	PE10328/Fig 16	Date	June 2014
Drawn By	SKM	Checked By	RJB	Approved By	HK
☐ STOKE-ON-TRENT (HEAD OFFICE) TEL 0178 227 6700 ☐ CARDIFF TEL 029 2072 9191					
☒ NEWCASTLE UPON TYNE TEL 0191 232 0943					
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CLIENT	
PROJECT	Trench Farm Solar Photovoltaic Scheme
DRAWING TITLE	Figure 16 Photomontage Viewpoint 6